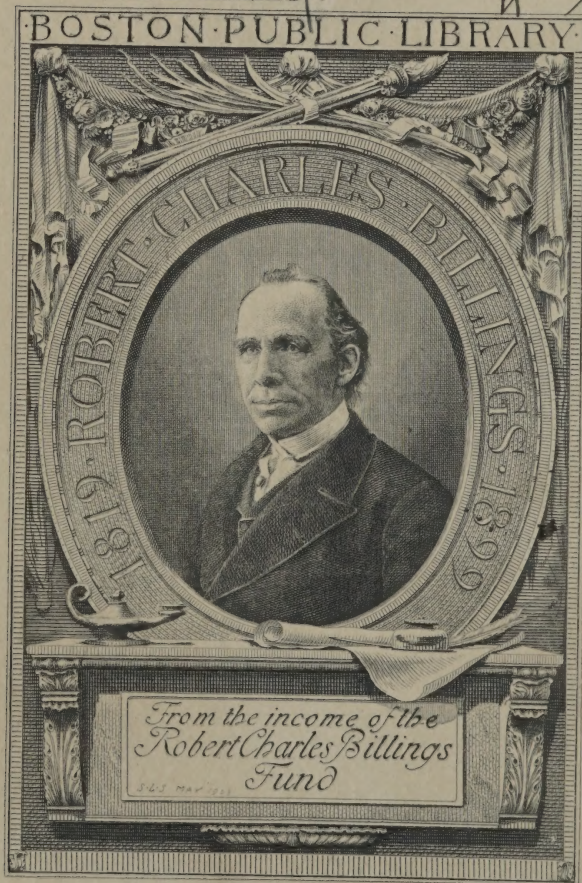


No 3816.119

4th Ser.



MEMORIES OF THE MONTHS

FOURTH SERIES



Romneya Coulteri at Arundel Castle.

LONDON: EDWARD ARNOLD 1907.

Memories of the Months

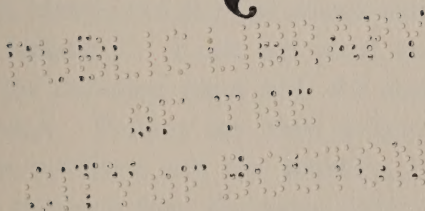
FOURTH SERIES

BY THE RIGHT HON.

SIR HERBERT MAXWELL

BART., F.R.S.

Horas non numero nisi felices



LONDON

EDWARD ARNOLD

41 & 43 MADDOX STREET, BOND STREET, W.

1907

Jan 15, 1923
7

cont. 45.

4th Series

A photograph of a light-colored, textured surface, possibly paper or fabric, covered with numerous small, dark, circular marks. These marks are scattered across the surface in a seemingly random pattern, with some areas having a higher density of marks than others. The marks appear to be small holes or indentations, possibly from a perforated material or a specific type of printing process. The overall distribution is sparse and irregular.

P R E F A C E

It is with unaffected diffidence that I offer a fourth series of these 'Memories.' One is justly suspicious of a writer who describes himself as yielding to the solicitation of friends in publishing a book; but it is the plain truth that I should not have trespassed again on the indulgence of my readers, but for the frequency of the inquiry, 'When are we to have some more Memories?'

More serious is the ground for distrust of an amateur who trenches, however tentatively, on the domain of exact science. There is an ominous passage in one of Cardinal Newman's letters to Wetherell: 'No single writer, be he who he may, could possibly write on Scripture, history, and physical science with more than a shallow versatility.' I can but plead that I have not written the following pages with the reckless audacity of a sciolist. Finding my chief delight in the open field, the woodland, and the riverside, I fell into the habit of acquiring from the surest authority explanation of the nature of beasts and birds, fishes and insects, trees and herbs, which came under my random observation; and whereas manuscript is a cumbrous and tedious source of reference, these notes originally began to find their way into print solely for my own convenience.

They have received kindly recognition far beyond their own merits or the writer's expectation, and have brought him into correspondence with many persons in near and distant parts of the earth. Some have taken the kindly pains to lay finger on blunders, and here is an opportunity for correcting such as come to mind.

1st Series, p. 20.—The iris of the scaup is not white but yellow. I wrote from distant memory of the only one I ever cared to shoot.

1st Series, p. 79.—Canon Ellacombe tells me that he believes it was Dillenius, not Linnæus, who was so profoundly affected by the prospect of English gorse in bloom, but he cannot remember his authority.

2nd Series, p. 165.—The holly is described as diæcious, *i.e.* bearing flowers of different sexes on separate trees. This is not correct. Bentham, *curâ* Hooker, says, 'Flowers white in dense clusters in the axils of the leaves, often unisexual.' The truth appears to be that the perfect flowers are five-cleft and hermaphrodite; but many flowers, often all those on one tree, are four-cleft and develop only male organs. This accounts for the impossibility of distinguishing among young hollies those which will bear berries and which will not, for the plants do not flower till they are several years old.

To the list of rabbit-proof plants at the end of the 2nd Series should be added several species of privet, monbretia, funkia, and the wood forget-me-not (*Myosotis sylvatica*), with the usual *caveat* that nearly everything requires protection when first planted where rabbits are

numerous. Where they are in excess, hardly anything is safe.

Acknowledgment was accidentally omitted from the 3rd Series of authorship of the photographs, five of which were taken by Earl Percy, M.P., and the sixth by Sir Hugh Shaw Stewart. Of those in the present volume, the picture of Alnwick Castle in winter is by Mr. Robson of Alnwick, and that of the Major Oak, Sherwood Forest, by Mr. H. Seator, Stair Arms, Dalkeith; the rest are inexpert 'snaps' of my own.

The papers numbered xxi. and xli. originally appeared in *Blackwood's Magazine*, to the proprietor of which venerable periodical my thanks are due for permission to reprint them.

HERBERT MAXWELL.

MONREITH, *January* 1907.

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January

I

THE poets, with almost universal consent, have dealt with winter as a season only to be endured as the **The Beauty** antechamber of spring. 'See, winter comes,' **of Winter** wrote our Scottish Thomson, who made the phases of the year his special study—

'See, winter comes, to rule the varied year,
Sullen and sad, with all his rising train—
Vapours and clouds and storms. Be these my theme.
 Thus pass'd the time,
Till, through the lucid chambers of the south,
Look'd out the joyous spring, look'd out and smiled.'

Even Tennyson, than whom none ever upheld a more faithful mirror to Nature, was seldom inspired by her winter mood. His song could not be restrained when—

'The ground flame of the crocus breaks the mould,
Fair spring slides hither o'er the southern sea,
Wavers on her thin stem the snowdrop cold,
That trembles not to kisses of the bee.
Come, spring, for now from all the dripping eaves
The spear of ice has wept itself away,
And, hour by hour, unfolding woodbine leaves,
O'er his uncertain shadow droops the day.'

All his verse is redolent of growth and blossom.

'Can trouble live with April days,
Or sadness in the summer moons?
Bring orchis, bring the foxglove spire,
The little speedwell's darling blue,
Deep tulips dash'd with fiery dew,
Laburnums, dropping-wells of fire.'

Even when summer skies betrayed the laureate and sent him dripping home, he harboured no reproach, only praise for—

‘The full-fed river winding slow
And herds upon an endless plain,
The ragged rims of thunder brooding low,
With shadow-streaks of rain.’

It is true that, addressing his friend Palgrave in the tropics, he described himself as—

‘Tolerant of the colder time :
Who love the winter woods, to trace
On paler heavens the branching grace
Of leafless elm or naked lime,
And see my cedar green, and there
My giant ilex keeping leaf,
When frost is keen and days are brief.’

But this is conventional winter weather—the clear skies and tingling frost, the ruddy sunsets and heaped snow of Christmas cards; not the sober stillness—sombre, some would call it—broken with rare gleams through rents in the low cloud canopy, which westland dwellers know so well.

Like the poets, the painters look askance upon an open winter. Misty summer morns of Corot, lush hayfields of Copley Fielding, autumnal glories of Linnell and scores of others as deft as he; but for winter we must spread our palettes with flake white and plenty of it, rejoicing in our skill to depict the sparkling crests, the limpid shadows, the bewitching curves of snow-wreaths. Yet I maintain that the fleeting charm of a mild winter day moves one to gratitude as deeply as does the superior splendour of the brighter months. Does the sun shine? Then is its light of far more artistic value than at other seasons, for



*Alnwick Castle in Winter
No. 1000 sublimant onus Silver Laboratories.*

1000 FEBRUARY 1907



the rays are more oblique, casting those long shadows which the painter has to snatch from summer sunsets. Is the sky overcast? Then what delicate modulations in the cloudy dome, what depth of mystery in middle distances, how faint yet firm are the outlines of distant hills!

But we are not all poets, to judge by a certain type of journalism which thrives amain; still less are we all potentially artists, or we should be driven raving mad by the field advertisements of pills and soap to which we passively submit. It is as a plain citizen that I am prosing, and this is the scene that has moved me so to do.

One morning lately (it happened to be a day, as I afterwards learned, when the fog in London was at its densest and yellowest) I stood on the margin of a wood-girt lake before sunrise. To do so involved no great effort of early rising, seeing that the sun did not rise till after eight o'clock, and the lake is but a few hundred yards from my own door. Not a breath was stirring; there was more cloud than clear in the sky; but it was high, fleecy cloud, *cirrus* and *cirro-stratus*. The air was full of sound, for the wild-fowl were just returning from their supper-parties in the marshes and springs, and were settling on the water with much conversation and splash. There was the mallard's homely quack, the musical whistle of the teal, the wilder *whew* of widgeon; besides which I could recognise the notes of diving ducks, who are content to take their meals at home—that is, where they spend the day. By-the-bye, it is a puzzling thing why certain ducks—mallard, widgeon, teal, gadwell, shovellers, etc.—feed only on the surface, never diving to

secure the choicest morsel if it lies deeper than the length of their necks. All these birds can dive excellently when put to it—when winged, for instance, and pursued by a retriever.

As the light broadened, I could make out the various companies, some not five-and-twenty yards from my feet, others twinkling through the gloom of the farther shore, a quarter of a mile away. Then, just before the upper limb of the sun appeared above the eastern woods, the lake being still in shadow, there passed seaward, right over my head, within easy shot, but high enough to be illumined by the beams of an unseen sun, a gaggle of seventeen gray-lag geese, flying in a perfectly symmetrical >. That was the climax of the morning. Presently, up jumped the sun, and I wended my homeward way to breakfast, more in love than ever with the shrew Winter.

II

I have often been asked why water-fowl, alone among birds, invariably fall into the > formation when taking a prolonged flight. Other gregarious birds of excellent wingmanship—rooks, plovers, pigeons, and so on—do not adopt it. Many of them obey either a single leader or a simultaneous impulse communicated from a committee of leaders, as may be seen any day by watching the gyrations of a flock of lapwings; but swift and precise as are the evolutions of these birds, they are performed in a mass, without apparent geometrical cohesion. I have searched in vain through such ornithological works as are at hand for some reason or hypothesis to account for the peculiar order of the flight of water-

Wild Geese

fowl, and am thrown back upon independent speculation. It seems pretty clear that the > is the result of an obligation on the part of every bird in the flock to keep his eye on the appointed leader. If they were to follow in a disorganised crowd, they must jostle one another, for they are heavy in proportion to their size, with no power of soaring, keeping themselves aloft by rapid strokes of relatively short wings. Jostling would be dangerous work, for these wings are exceedingly powerful, as I realised last spring, when a 'cob' or male swan, seizing with his bill the wing of another cob which had approached imprudently near the young brood, battered him to death by repeated wing-strokes. The head of the unfortunate intruder was one mass of bloody bruises. There is good cause, then, for all water-fowl, from the lordly whooper to the diminutive teal, to avoid striking their comrades in flight; so, to conform with the obligation to keep an eye on the leader, each bird in the flock has to fly outside of the bird in front. The leader is followed by two birds; the two next keep outside the first pair; the third pair outside the second; and so on to the last pair, widely separated from one another at the rearward extremity of the >.

There are eight species of wild goose known in the British Isles (not counting the so-called solan goose or gannet, which is not a goose at all, but a cormorant)—the gray-lag, the white-fronted goose, the bean goose, the pink-footed goose, the barnacle, the brent, the snow goose, and the red-breasted goose. The last two are very rare visitors; the others frequent our shores every winter in great numbers; but among them all, only the gray-lag has ever been known to nest with us, which it does upon

islands in certain fresh-water lakes in Caithness, Sutherland, and the Western Isles. The home-reared birds, however, form but a very small contingent in the great flocks which stream down from northern latitudes on the approach of winter.

III

Among the satisfactory results of the various Wild
Woodcocks Birds Preservation Acts which have been inscribed on the Statute Book from 1880 onwards, may be reckoned a marked increase in the number of woodcocks which rear their young in the British Isles. Previous to 1880 these beautiful and interesting migrants enjoyed no legal protection; they might be shot or netted at all times of the year. One of the tenderest points in my own conscience is that which preserves the memory of many days spent during the Easter school holidays in pursuit of woodcocks. But the Act of 1880 provided a close time extending from March 2 to July 31, in consequence of which the number of nesting pairs of woodcock has increased annually ever since.

This has made apparent the inadequacy of the present close season. Five-and-twenty years ago it was an uncommon thing to hear of a woodcock being shot before the winter flights began to arrive in October. Last year, 1905, I read in the *Field* newspaper of the destruction of many couples in the month of August on a moor in Perthshire by a gentleman who evidently thought he had done something worth recording. But what were these woodcocks? Immature birds which had not attained their full powers of flight, and which any intelligent sportsman would be ashamed of shooting. This is a case

in which County Councils ought to exercise the powers conferred on them by the amending Act of 1892. They can apply to the Home Secretary, or, in Scotland, to the Secretary for Scotland, for an extension of the close time for any wild bird. It is no use protecting woodcocks during the summer months, if their broods are to be slaughtered in August. They should enjoy the same close time as pheasants—namely, from February 2 to September 30 inclusive—and all good sportsmen and lovers of wild creatures would rejoice if this were done.

I have said that since the inauguration of a close season in 1881 the number of woodcocks breeding in the British Isles has been steadily increasing. The reason for this is pretty obvious. The flights that abide with us in winter are composed of birds which bred and were bred in more northern latitudes. These move away in spring to Iceland, Scandinavia, and Siberia, and their place is taken by birds which have wintered in southern Europe, intending to nest in Britain. Multitudes of these used to be shot in March and April, so that in most counties a woodcock's nest was considered something remarkable. It is so no longer. True, many districts have been rendered unsuitable for these birds by extensive drainage, and we are not likely to see again the abundance described in a book written in 1602, quoted by Professor Newton in his admirable *Dictionary of Birds*, where woodcocks are stated to be 'taken in cock-shoote tyme, as yt is tearmed, which is the twylyght, when yt ys no strange thinge to take a hundred or sixe-score in one woodd in twenty-four houres'; but wherever there are broad woods and marshy land, there native woodcocks are increasing once more. During the last fifteen years the Duke of Northumber-

land's keepers have had instructions to mark such woodcock chicks as they can find during the summer. During two seasons, 1893 and 1899, no young birds were marked; in the remaining thirteen summers two hundred and sixty-nine have had a metal label attached to the leg, stamped with N and the year of capture. The number of birds so marked annually has ranged from four in 1894 and six in 1895 to forty-nine in 1904 and fifty-one in 1905. Now, if it may be assumed, as is generally believed, that British-bred birds migrate southwards in winter, it was not probable that many of the duke's labels would be understood and reported if recovered in the Mediterranean region. Down to the close of 1903, twenty-eight labels out of one hundred and sixty-nine had been found on birds shot within the British Isles; which evidence, so far as it goes, is adverse to the theory of a universal southern migration, for all these birds, except three, were shot between the beginning of November and the end of January. One of them, marked in the summer of 1903, was shot in Forfarshire in November of the same year, actually one hundred miles north of the place it was reared.¹

There is no period of the day which has so many synonyms in our language as evening—gloaming, dusk, twilight—all of them musical words. In the above-quoted passage from an old sporting book occurs another—an unmusical one—about the origin of which there has been a good deal of speculation. It is not uncommon in Elizabethan literature.

¹ While these pages are going through the press, I receive notice of another woodcock behaving in an unorthodox manner. Marked at Alnwick in May 1906, it was shot at Heriot in Midlothian in the following autumn.

King Richard. Saw'st thou the melancholy Lord Northumberland?

Ratcliff. Thomas, the Earl of Surrey, and himself,

Much about *cockshut* time, from troop to troop

Went through the army, cheering up the soldiers.

Richard III., Act v. Scene 3.

The original spelling was 'cockshoot,' as Middleton, in his *Widow*, Act iii. Scene 1, speaks of 'a fine cockshoot evening.' Needless to say that the etymology sometimes suggested, as being from the time when cocks and other poultry are *shut* up, is preposterous. 'Cockshoots' were glades in woodland, also called 'cockroads,' in which nets were set of old to catch the woodcocks as they winged their flight to nocturnal feeding-grounds. The term 'cockshoot' has fallen out of use, just as the nets for catching the birds are never spread now. It would hardly pay anybody to do so.

IV

There is a common, but probably a mistaken, belief that animated nature was framed generally upon a more gigantic scale in former geological ages than at the present time. Certainly the Deinosaurians of the Jurassic beds were creatures of prodigious bulk, the *Atlantosaurus* of Colorado reaching a length of about one hundred feet, with a height of thirty feet; and the recently reconstructed *Diplodoccus* was far longer than any living animal (*pace* the sea serpent), and was the most enormous four-footed animal that ever stepped. Yet I fancy that the blue whale (*Balænoptera Sibbaldii*) might weigh in a winner against all creatures, past or present, in the matter of sheer bulk. Moreover, while the remains of large animals are more likely to be

Past and
present
Forms of
Life

preserved in sedimentary beds than those of minute organisms, they are also less likely to be overlooked when exhumed in the operations of human industry. Take as an example the chalk-beds of Great Britain, and, among these, the Senonian beds, that massive formation which is two hundred and sixty-five feet deep at Margate. The whole of this is pure chalk, composed almost entirely of the shells of myriads of microscopic animals classed as *Foraminifera*, which co-existed with mighty Deinosaur, Ichthyosaurs, and Mosasaurs, some of which have been found of a length of seventy-five feet. Even less fitted than these fragile shells for preservation through innumerable æons are the delicate forms of insect life; yet these have been identified in beds far older than the chalk, the most ancient known insects having been discovered in Devonian rocks of New Brunswick. Some of these certainly were designed on heroic lines, one being an ephemerid or May fly, with a wing spread of five inches; and the carboniferous beds of Canada, younger than the Devonian, have preserved a still nobler May fly, measuring no less than seven inches across the wings. Scorpions of gigantic size, as well as spiders, cockroaches, and beetles of ordinary stature, have been found in the same formation. Among the Jurassic rocks of the Lower Lias occur bands so densely filled with flies and beetles that they have come to be known as the Insect Beds. Upwards of one hundred distinct species of beetles have been identified among them, and several species of midges and gnats. Coming down to the Tertiary period, amber, the fossil resin of submerged forest, has preserved myriads of the most delicate forms of insect life, which flitted through forests tenanted by such gigantic creatures

as the Mastodon, Deinotherium, and Deinoceras, the last-named being a beast described by Marsh as of the size of an elephant, with the habits of a rhinoceros, and carrying two horns on the forehead, two on the snout, and one on each cheek.

On the whole, therefore, we may conclude that, although the absence of destructive man permitted the existence of a larger proportion of gigantic creatures in past geological ages than may be found at the present time upon our crowded globe, the general scale of creation has not altered with the lapse of ages.

Closely allied to the extinct Deinoceras and to the existing tapirs of South America was a huge elephantoid creature of the Miocene age, ticketed by geologists as the Titanotherium. In general appearance it must have borne some resemblance to a rhinoceros, standing seven feet high at the shoulder, four-toed, and carrying on the snout a pair of enormous transverse horns. Professor R. S. Lull has recently communicated to the *American Naturalist* some interesting conclusions to which a study of these horns has brought him. Hitherto, zoologists have recognised four different types of horn structure—namely (1) the rhinoceros type, formed by hairs agglutinated into a solid cone resting upon a rugosity of the skull bones; (2) the ox and antelope type, consisting of a bony core covered with a hollow sheath of true horn; (3) the giraffe type, consisting of a bony core covered with skin and hair; and (4) the deer type, consisting of antlers which grow upon the frontal bone, and are shed and renewed annually. An intermediate type is furnished by the prongbuck, which carries a permanent bony core like the ox, and a temporary sheath of horn,

shed and renewed each year. Professor Lull believes that the Titanotheres supplies a fifth distinct type; and that the absence upon the bony core of the grooves and markings indicating the former presence of blood-vessels, such as may be seen on the cores of ox-horns and of the horns of certain extinct reptiles, shows that the Titanotheres' cores were not covered, as has been assumed hitherto, by a hollow horny sheath. Moreover, the summit of each bony core is crowned with a rugosity similar to that which supports the horn of a rhinoceros. This leads Professor Lull to conclude that the horns of the Titanotheres were simple bony prominences, covered with skin, but tipped with horns of agglutinated hair, like those of the rhinoceros. Altogether the aspect of this creature must have been so ferocious that one would have gone a long way round rather than meet him on a Miocene night.

V

I have been taken greatly to task by a correspondent who complains that, while he derives pleasure
The Terminology of Science from reading my discursive open-air notes, he 'cannot bear the barbarous scientific names of things.' Unluckily it is impossible to dispense with them in discussing animate and vegetable nature, owing to the want of precision in English terminology. 'What is the use of giving long Latin names that nobody can remember to creatures and plants which have perfectly intelligible English names?' What indeed? if English names *were* intelligible, or rather, if they were capable of being used with precision. But they are not. For instance,

everybody knows a buttercup when he sees it; but there are thirteen different species of British buttercups, to distinguish which is hopeless without having recourse to the dead languages, *which do not change their meaning*. A living language is constantly changing, notwithstanding that change has been retarded by writing and printing. Just as everybody knows a buttercup, so would any Briton be indignant were he suspected of not knowing a robin when he saw it. Yes, but although all Britons speak English, all who speak English are not Britons. Over the way there, to the west, there is an English-speaking population of some sixty-five millions who apply the name robin, not to our familiar little fellow-creature with the red vest, but to a kind of thrush which has no other English name but robin. So if a Briton wishes to indicate the American robin, he must speak of *Turdus migratorius*; and if an American wants to speak of the British robin, he must use the term *Erithacus rubecula*, and thus avoid inevitable confusion.

The American cowslip (*Dodecatheon*) is more like a cyclamen than the familiar ornament of our meadows in May, which, by-the-bye, retains in the eastern counties of England its old name 'paigle.' The evening primrose of American woods is a very different flower from our familiar harbinger of spring, for it stands three feet high and belongs to a widely different order of plants. Again, the American blackbird is not our British merle, but a kind of oriole; even the American sparrow is not the disreputable little rascal of our streets and stableyards, but a kind of woodland bunting. So it is in another hemisphere: the Australian trout is not a member of the salmon family, but a diminutive kinsman of the pike;

the Australian brush turkey matches the pride of British poultry-yards in stature, but has no racial affinity with the bubblyjock. And so on. Now, whereas it is conceivable that these *Memories* may find readers in other hemispheres than our own, it is desirable, for the sake of lucidity, to have recourse to the only precise terminology at our disposal. But I will undertake to use these terms in future as sparingly as possible, and to render them as inoffensive as may be by shrouding them in brackets.

Even in our own country we are very lax in the use of names for beast, bird, and flower. What bird did Chaucer mean by 'the crow with voice of care'? Probably a rook, for most people talk of rooks as crows, a term which ought to be reserved for the carrion crow or the 'hoodie.' Again, what flower had Milton in mind when he wrote about 'the tufted crow-toe'? (*Lycidas*, i. 142). Probably the birdsfoot trefoil, sometimes called crow-toes; but in Scotland the wild blue hyacinth is known as crow-taes, from the fancied resemblance of the unexpanded flower-thyrse to a crow's foot, and in England 'crow-foot' is a common name for the buttercup. It may be said that these are exceptional cases, and that there is no ambiguity about familiar names of English plants. Is there not? It requires but a moderate acquaintance with botanical literature to be aware how easily they are transferred from one flower to another. For instance, there are few flower-names more popular and more widely current in different languages than that of the Forget-me-not: in German, Vergiss-mein-nicht; in Danish, Kiærminde; in French, Ne-m'oubliez-pas; in Swiss, Förgat-mig-icke, etc. In the first quarter of the nineteenth century, forget-

me-not meant a totally different plant from the blue-eyed favourite which answers to that name now. It was applied to the yellow bugle or ground-pine (*Ajuga chamæpitis*), a common herb on the Continent, but only found in the southern and eastern counties of England. It was so called because its taste is so nasty; it is sure to be remembered by anybody who puts it in his mouth. Gray was the last botanical writer to call this *Ajuga* forget-me-not, in his *Natural Arrangement*, published in 1820; shortly after which time a pretty poem appeared (I am ashamed to say that I have forgotten the author), describing the death of a lover who had swum a river to get the blue flowers for his sweetheart, and perished on returning, flinging the flowers to her with the injunction — ‘Forget me not!’ The name stuck. The little flower that had hitherto been known in English as mouse-ear (*Myosotis*), from a fanciful resemblance of its leaves to a field-mouse’s ear, and as scorpion-grass, from an equally imaginative likeness of the curled flower-spike to a scorpion’s tail, became known all the world over as Forget-me-not.

VI

One hundred and fifty years ago it was easy to get out of the beaten track, and to encounter ‘wonders’ **The Pouched** at every turn; but now he who would experi- **Mole.** ence the thrill of excitement which the navigators of the seventeenth and eighteenth centuries enjoyed in exploring new lands, meeting unfamiliar creatures, and tasting novel fruits, must apply himself to a small segment of the animal or vegetable kingdom, and by means of the micro-

scope and scalpel work out the deeper mysteries of being. On July 14, 1770, Mr. Gore, sailing with Captain Cook, landed on the north-east coast of Australia, and shot a large animal, the like of which no European had ever seen before. One may imagine the keen speculation of the explorers on handling their first 'kangaroo'—for that was the name, says Cook, by which this beast was then known to the natives, although none of the aboriginal tribes now surviving use the term. Down to that time, the only known marsupial animals were the American opossums, and it came as a surprise to zoologists to find, as years went on, that, with the exception of certain bats and rats, and the doubtfully indigenous dingo or wild dog, all the terrestrial mammals of Australia were non-placental and marsupial. The characteristic features of marsupial mammals are, first, the absence of the vascular connection between the parent and the unborn embryo; and, second, the *marsupium* upon the abdomen of the female—an external pouch, formed by a fold of the skin and lined with soft hair, into which she receives her young for suckling and protection. From the greatest to the least, with the exceptions above named, this arrangement prevails in all beasts of the Australian continent. It is such an obviously convenient device for the convenience both of parent and progeny that one is not surprised to find evidence from geology that all mammals once were framed upon this design. At all events, the earliest trace of mammalian life occurs in the Triassic rocks in the form of small marsupial animals like ant-eaters, which moved upon the earth before lizards had developed feathers, dropped teeth, and grown into birds. That it was a successful form of

life is shown by the remains of *Diprodoton australis*, a gigantic extinct marsupial of the bulk of a hippopotamus.

Why, then, did these pouches go out of fashion? Why did the placental type of mammal supersede the marsupial in all parts of the globe except Australia? And why, if the marsupial form failed in other lands, has it proved so enduring in Australia alone? No answer comes from the past to questions such as these, nothing but feeble speculation, or, at most, suggestion drawn from analogy with other instances of extinction. Speculation based upon such shadowy grounds regarding problems in biology is seldom worth attention; yet, seeing that there is no penalty upon its indulgence, I shall venture to offer an irresponsible essay in that line.

About fifteen years ago there was discovered in Australia a kind of mole (*Notoryctes typhlops*) hitherto unknown to science. The mode of this creature's life seems to have had a destructive effect upon one of its most important organs—that of sight. In our own mole (*Talpa europæa*) the skeleton has been modified so as to adapt it perfectly to its peculiar habits. The eyes also are minute, and closely environed with fur, so as to offer a minimum of sensitive surface to grains of earth or sand; but they exhibit no signs of deterioration, except in size. For practical purposes they remain effective organs of vision. In the Australian mole it is different; the eyes are far gone in degeneration—further, affirms Miss G. Sweet, who has made a special study of this rare creature, than in any other burrowing mammal, 'the retina being generally reduced to a mass of simple cells, and the cornea and sclerotic (white of the eye) to a pear-shaped capsule enclosing a ball of pigment.' In short, the dry sandy soil

in which this mole works forms an environment incompatible with any functional eye, which would be speedily destroyed by irritation and inflammation. Nature has made an effort to preserve the organs by abnormal development of the lachrymal duct communicating with the nasal cavity, whereby the chamber might be cleansed more effectively of sand, but the effort has failed. The failure seems likely to be fatal to the preservation of the species; the pouched mole already is practically blind, though still sensible of the difference between dark and daylight. Yet eyesight, one must suppose, is more essential to the welfare of the ruddy-coated Australian mole than to our own sooty-garbed 'mowdie,' because, whereas the true mole burrows deep, and is very seldom seen alive aboveground, the *Notoryctes* of the southern hemisphere works so near the surface that Mr. Lydekker has aptly compared its rapid movement through the sand to that of a porpoise through a smooth sea. The back of the animal may be seen appearing at frequent intervals in its course. It is not surprising, therefore, to learn that the pouched mole is already exceedingly rare, and appears to be on the verge of extinction in consequence of its peculiar infirmity.

Now, in what manner does this failure of nature to preserve the eyesight of the pouched mole, and the approaching disappearance of the genus, bear upon the general disappearance of the marsupial type of mammal from all the world except Australia? This mole has become disabled in the struggle for existence by means of an external physical agency which has extinguished its eyes. It is not extravagant to assume that a similar agency prevailed to put an end to pouches. It is con-

ceivable, is it not, that certain verminous insects found the *marsupium* a convenient harbour, whence the mammal attacked could not eject them by scratching. For instance, West Indian and West African travellers and residents are painfully familiar with the disgusting 'jigger' (*Sarcopsylla penetrans*), a tropical flea which swarms in the ground and foliage of swampy districts. The females burrow into the feet and toes of human beings, and having excavated a nest in the flesh, swell to the size of peas, and produce a large progeny of maggots. Unless the nest and its contents are extracted before the brood is hatched, serious ulceration is set up, and an ugly wound is the result. It does not require much imagination to conceive the effect upon the *marsupium* if it were to become the favourite nesting-place of jiggers or insects of similar habits. Either marsupial animals would die out and make way for those of a type less vulnerable by vermin, or their structures would become modified to suit the peculiar environment, and the placental type would be evolved.

The marsupial mole itself offers a striking example of the effect of environment upon structure. In all other known marsupial mammals the orifice of the characteristic pouch is always directed forward, toward the head of the creature; but in *Notoryctes* it is turned the other way, toward the tail. Why? The reason could scarcely be plainer. The animal finds its living in fine sand, hunting its prey rapidly through that irritating medium. If the pouch opened towards the front, it would soon be filled with sand as the mole burrowed its way underground. It was a simple expedient, therefore, to turn it the other way, which enables the young to sit at ease 'with their

backs to the horses.' But how was this novelty established? It baffles understanding to explain it by evolution. Must we have recourse, as some profound investigators seem inclined to do in other biological problems, to the direct intervention of a controlling Power, who has arranged this unique expedient in order to secure the perpetuation of one of the humblest and apparently least valuable of mammals?

VII

The antivivisectionists we have always with us, and **Can plants** they take effective means to prevent us over-
feel? looking their presence—the startling question which appears as heading to a serious scientific article in the *Monthly Review* (September 1905) seems to indicate that, for consistency's sake, they must shortly enlarge their field of operations. To the question 'Can plants feel?' Mr. G. Clarke Nuttall declares that he can return no answer but an affirmative.

Hitherto it has been the exclusive privilege of poets, sacred and profane, to deal with flowers and trees as sentient beings, thereby incurring the censure of John Ruskin, who used to trample in his delectable manner upon what he termed the Pathetic Fallacy, whereby moods and motives are imputed to inanimate objects, corresponding to our own fluctuations of spirit.

'The spendthrift crocus, bursting through the mould,
Naked and shivering with its cup of gold.'

'The crocus,' commented Ruskin, 'is not a spendthrift, but a hardy plant; its yellow is not gold, but saffron.' (Saffron! quotha: no purer gold surely in nature.) As

an extreme example of the pathetic fallacy, he quoted the exquisite lines from *Maud*—

‘ There has fallen a splendid tear
From the passion-flower at the gate.
The red rose cries, “She is near, she is near!”
And the white rose weeps, “She is late.”
The larkspur listens, “I hear, I hear!”
And the lily whispers, “I wait.”’

But the tendency is far older than Tennyson, or even than Darwin’s *Loves of the Plants*. There is Jotham’s scathing parable of the trees electing a king (Judges ix. 8); there is the noble Song of the Children, ‘Oh, all ye green things upon the earth, bless ye the Lord; praise Him and magnify Him for ever’; there is Isaiah’s verse, ‘The mountains and the hills shall break forth into singing, and all the trees of the field shall clap their hands.’ All these, and hundreds more, may be dismissed as mere imagery; but what if it turn out that there be truth at the bottom of it? as Mr. Clarke Nuttall affirms. Plants and animals both ‘live’; the life of both may be traced backwards from the highest level attained by each through infinite gradations till we arrive at a mere mass of protoplasm, which may still be pronounced to be either animal or vegetable. ‘But if we peer still further into the mysteries of elemental life we find that, out beyond the simplest plant and out beyond the simplest animal, there yet lies a kind of no-man’s land inhabited by mysterious organisms—the Myxomycetes—of none of which can we say “This is a plant” or “That is an animal” without our assertion being challenged.’ The suggestion is strong that the vital principle is identical in animals and vegetables, and that, widely as the two streams have

diverged, the patient explorer may trace them to a common source.

When it is considered how sensitive all the more highly organised plants are to light, it will be heard with no surprise that a German botanist, Professor Haberlandt, claims to have identified four different organs in plants which are sensitive to touch, and that these are closely analogous to the organs of touch in animals—namely, sensitive spots, bristles, hairs, and papillæ. The spots occur on the tips of tendrils, in the same position and answering the same purpose as the sensitive tentacles of zoophytes. Charles Darwin has recorded how the tendril of a passion-flower responds to the gentlest touch of a finger by curling round it, and straightens itself out again when the finger is removed.

One must not interpret as caused by sensation purely mechanical movements like those of the blue sage (*Salvia patens*) of our greenhouses and gardens. A native of Mexico, its structure is adapted for the visits of humming-birds, which hover before the flower and insert their delicate bills into its narrow throat to extract the honey from nectaries at the base of the style. In so doing they touch a simple lever near the base of the anthers, which descend smartly from the upper lip of the flower, discharge their golden pollen on the intruder, and return to their place when he withdraws. The bird flies off to another flower, where the process is repeated, and cross-fertilisation ensues. Anybody can make the flower go through this performance by thrusting a stem of grass into its throat. But in the flowers of every species of barberry or mahonia, a similar movement is the result of sensation. The stamens are very irritable, closing up

with a snap upon any intrusive object, such as a small winged insect.

But it is when one comes to examine the functions of hairs and bristles in such plants as the common sundew (*Drosera*) in our peat-bogs, and the Venus's fly-trap in those of North America, that the conviction becomes almost irresistible that not only are such plants sentient, but that they are *conscious of sensation*; that they are not mere mechanical automata, but are actually capable of purpose. Venus's fly-trap is an extreme example on a considerable scale, but the sundew is more easily accessible for most people in this country. The little circular leaves of this plant are thickly set with red hairs, each tipped with a highly sensitive glandular head. These hairs quickly close upon any minute object that touches them. If that object be an insect, it is closely held till all the nutritive parts and juices of the insect are absorbed by the plant. But instead of an insect, drop a morsel of grit or dry wood upon the leaf; the hairs close as before, but presently they will uncloze and drop the indigestible object. The plant has detected the imposture, and declines to be deceived. In this action there is something very suggestive of intelligence and will. Nor does Professor Slater of Harvard University shrink from the suggestion. 'We are in no position,' says he, 'to say that intelligence cannot exist among plants, for, in fact, all that we can discern supports the view that throughout the organic realm the intelligence that finds its fullest expression in man is everywhere at work.'

One more example let me cite, and a familiar one, of the apparent intelligence of plants. The common holly

bears strongly-spined leaves on all its parts within reach of browsing animals; but the leaves above that level become spineless, as smooth as those of a camellia. To verify this phenomenon, which suggests purpose on the part of the tree or of some higher and external intelligence, one should be careful to inspect only the wild holly; for this is one of our native plants which has been longest subjected to cultivation, resulting in many 'sports' or abnormal varieties. A similar discrimination is shown by the evergreen or holm oak, the juniper, and the osmanthus, both of which when young carry spiny leaves, but only smooth ones when a safe height is reached. Gorse, which seldom attains a stature above the browsing line, never lays aside its defensive armour.

It appears from Professor Haberlandt's researches that the sensations of a plant are localised in certain isolated organs; wherefore no lady need apprehend that she is inflicting pain in cutting a nosegay. Nevertheless, the operation is real vivisection—the severance of living tissue.

The spectacle which has suggested these reflections on a January morning certainly suggests that plants are keenly sensitive to other forces than light. Yesterday the leaves of the rhododendrons were all broadly spread in a mild, moist atmosphere; last night the thermometer fell to 18° Fahrenheit, and the same leaves present quite a different aspect. The common *ponticum* leaves are sharply depressed; those of the Sikkim rhododendrons are shrivelled and curled into tight rolls, as expressive as possible of dislike to the cold. When the frost passes away they will expand again as before.

February

VIII

THE gannets of the Bass Rock are henceforth to receive special protection. Hitherto they have been under the general provisions of the Wild Birds The Gannet Protection Act of 1880, which secured them a close time from March 1 till August 1. But it had become the custom for trippers to besiege the rock so soon as the close season was over, when the ledges were crowded with young birds, and to shoot them down, old and young, from mere love of destruction. The birds are absolutely useless when killed, so most of their bodies were left floating about the firth, tender-hearted folk being scandalised at such wanton sacrifice of beautiful, vigorous life. Mr. W. A. Nicholson, editor of the *Shooting Times*, wrote to the Society for the Protection of Birds on the subject; the society in turn appealed to the Haddington County Council, and the council applied to the Secretary for Scotland, with whose approval an order was issued last July (1905) prohibiting the slaughter or capture of gannets within the county of Haddington before November 1 in each year.

The gannet or solan goose is not a goose at all, but a cousin of the pelicans and cormorants. It is one of those creatures which cannot endure solitude, but must have the company of numbers of its kind, especially at the

breeding season; therefore, however widely gannets may range in little flocks of six to sixty individuals, following shoals of herrings, pilchards, and other gregarious fish, they always reassemble in spring at certain stations, to which they have adhered with inflexible constancy from immemorial time. Rooks may be driven by persecution to desert their ancestral trees; many a dovecote has been cleared of its legitimate inhabitants by the intrusion of starlings; but gannets will perish to the last bird rather than abandon the rock which has become consecrated as the birthplace of countless generations.

Of nine breeding colonies of gannets in the British Isles, one is off the coast of England, Lundy Island; one off that of Wales, Grassholm; two are in Irish waters, and five in Scottish—namely, the Bass Rock; Ailsa Craig; St. Kilda; Suleskerry, about forty miles north of the Butt of Lewis; and the Stack, to the west of Stromness.

Estimates of number applied to such a restless population as inhabits these colonies cannot be otherwise than loose; but there appears to be convincing evidence of considerable diminution since 1831, when Macgillivray reckoned that 20,000 gannets had their home on the Bass Rock alone. In 1869 it was calculated that the birds on that station had been reduced to 12,000, and that Ailsa Craig harboured a similar number; but in 1877 the Ailsa colony had fallen to 10,000. On the other side of the Atlantic, the reduction has been far greater than with us, for the fishermen of the Gulf of St. Lawrence view these active and voracious birds as the worst kind of vermin. It must be admitted that gannets are pretty diligent and effective competitors with man in the consumption of fish; but even so, the supply of herrings, at least, seems

equal to the combined requirements of feathered and unfeathered bipeds. Assuming that there are about 40,000 gannets, old and young, in the five Scottish colonies, and allowing three herrings a day as the average consumption of each of these birds throughout the year, we arrive at a total of about forty million herrings in the course of the year. But this is a trifling amount compared to the total taken out of Scottish waters by fishermen. There are no means of ascertaining what that is; but some idea of its magnitude may be had by examining the return by the Scottish Fishery Board of the quantity of herrings cured on the coast of Scotland from the year 1811 down to 1903. Taking the ten years 1894-1903, the average number of barrels cured was 1,479,203 per annum. As each barrel contains about 720 herrings, the average number of herrings cured in each year shows the prodigious total of 1,065,026,160, besides those fish consumed uncured, which reckon for something. It appears, then, that the time has not come when we need to grudge the gannet the prey which it captures in such a sportsmanlike fashion.

There are few prettier sights in bird life than a company of gannets fishing, especially when sky and sea are blue. They hunt in single file, generally flying about sixty feet above the surface of the water. When the leading bird perceives fish beneath him, he throws himself upwards, poises for a moment, and then, closing his wings, dashes down with the velocity of a meteor into the sea. Whether he strikes a fish or misses it, on rising into the air again he takes his place in rear of the file, each successive bird making a similar plunge in turn. The sunlight gleams on the snowy plumage and sparkles on the spray thrown aloft, as the busy creatures cleave the

waves; a spectacle which inspired the scribe of the *Anglo-Saxon Chronicle* to write of the sea as 'ganotes bæth'—the gannet's bath. Their mode of life seems the very ideal of freedom and excitement; but the muscular exertion must be tremendous, for the hunting range of these birds extends from the Baltic to Madeira, and from Greenland to the Gulf of Mexico. Moreover, the effort of rising from the water into the air after each descent is very great, although this seems to be facilitated by a peculiar adaptation of structure, in the shape of air cells under the skin of most parts of the bird's body, which can be inflated and deflated at will. It is well understood that it is the *weight* of a bird's body, and not its buoyancy, that is the essential factor in normal flight or soaring, acting like the string of a kite upon the wing expanse; but in the act of rising from the water, it is a great help to make oneself temporarily light.

I have heard fishermen grumbling against what they consider grandmotherly legislation for the protection of gannets. They apprehend a rapid increase in the number of them, and corresponding inroads upon the herring shoals. Certainly it is undesirable that these rapacious birds should multiply out of measure; but the ocean is wide, and the reproduction of gannets is very slow compared with that of other fowls. Each pair lays only a solitary egg each year; but to compensate for this Malthusian provision, the duration of life is much greater than in most birds. Yarrell quotes Selby as having been informed by the keeper on the Bass Rock that he could recognise individual birds by conspicuous marks, and had known some of them for upwards of forty years. Young birds do not attain adult plumage until their third or

fourth year, and do not enter the holy state of matrimony until they have done so. It will be seen, therefore, that creatures which have to attain four years of age before making any attempt at reproduction, and then only produce one egg per annum, are not likely to multiply at an excessive rate. Moreover, their adventurous existence is liable to be cut short by a violent death, for it is no uncommon thing for gannets in pursuit of herrings to get entangled in the nets, and so to perish.

IX

Talking of accidents to bird life, note may be taken of a singular fatality which overtook some wild geese during a sudden severe thunderstorm which passed over part of Norfolk early in February 1906. Five dead geese were picked up on the football field of Gresham's School, having been struck by lightning. The fact is attested by Mr. J. G. Wood, second master of Gresham's School, who examined the birds; and he adds that three more geese were reported as having been killed in like manner at Weybourne, and five more at Welling, villages in the same neighbourhood. A fate so untoward and, apparently, so undeserved, makes one muse upon the Scripture which assures us that not a sparrow 'shall fall on the ground without your Father.'

Wild Geese
struck by
Lightning

These birds were of the species known as the pink-footed goose (*Anser brachyrynchus*), which is the commonest kind in East Anglia. As Lord Lilford remarks in his *Birds of the British Isles*, the English name is very unsatisfactory, seeing that of the six species of wild geese

which regularly visit Great Britain, five have pink legs and feet. The scientific name *brachyrynchus*—short billed—is a far better definition, because it is only by the shortness of its bill and its slightly smaller stature that this bird can be distinguished from the bean goose (*A. segetum*).

It is a curious fact that of all the six species of geese that are to be found every winter in the United Kingdom, only the gray-lag (*A. cinereus*), which is far less numerous than any of the others, remains to breed in any part of these islands. This a few pairs do each spring in solitary parts of Sutherland and the Western Islands. The gray-lag is the reputed progenitor of our farmyard geese, and bears witness to the relationship by its call note, which, exactly resembling that of the domestic species, differs entirely from that of all other wild geese. The barnacle goose (*Bernicla leucopsis*) is easily distinguished from other British geese by its black neck, dark gray back and lighter gray sides, and from the brent goose (*Bernicla brenta*) by its white face. Seen from afar, both these species give the impression of birds with black plumage flecked with white; but closer inspection reveals beautiful modulations of tone, the scapular feathers and wing coverts being delicately fringed with silvery gray.

One more point about these two closely-related species deserves notice. Nothing is known certainly about the natural breeding habits of the barnacle goose, though it is surmised that it nests in Iceland and the extreme north of Norway; but it freely lays eggs and rears young in captivity. On the other hand, the brent goose, although known to breed in great numbers in Spitz-

bergen, Novaya Zembla, and elsewhere in that inhospitable region, absolutely declines to reproduce its kind in captivity, pining and dying if kept away from the salt water.

X

It is a cardinal feature of the inscrutable scheme of nature that the vast majority of living creatures exist by harassing and devouring creatures of other kinds. Man himself has fallen in readily with this part of the scheme, and although furnished with teeth intended for the mastication of fruits and roots, herbs and grain, far exceeds all other animals in abundance and variety of bloodshed. He receives fitting reward in the abhorrence of every wild creature. Beast, bird, and fish flee from his presence as from the accursed thing.

A pretty trite reflection this, but it has been brought uppermost by the behaviour of certain badgers which I endeavoured to establish, and did establish, in my woods more than twenty years ago. To speak more precisely, it was an attempt at re-establishment, because undoubtedly the badger was one of the commonest animals all over the south of Scotland before the disappearance of the forests. It is now exceedingly rare, and at the time I speak of had become totally extinct in Galloway. But how abundant it once was, let the occurrence of the word *broc* in place-names testify. That was, and is, the Celtic name for this animal, and was borrowed by the Saxon settlers, superseding their own names for it—‘gray’ and ‘bawson.’ Hence we find Kilbrocks in Galloway, from the Gaelic *coill-broc*, ‘wood of the badgers,’ and Kilbrook near Moffat, ‘wood of the badger,’ from the genitive singular

bruic; whereas Brocket in Ayrshire and Lanarkshire is the Saxon *broc wudu*, 'badger wood.' Brockloch is a common name in many counties, being simply the Gaelic *broclach*, 'a badger warren.' But it will never do to get among the dictionaries, or I shall never get to the beast itself. Only this may be added, that the name 'badger' has come into modern use under false pretences. In Middle English, *bager* means 'a corn-dealer,' a corruption of the old French *bladier*, *bladum* meaning 'corn' in Low Latin. The brock was suspected of eating much corn, which, being practically as omnivorous as a pig, doubtless it does when it gets the chance; so both in English and French it is known as the corn-eater, the name in the latter language being *blaireau*, from *blé*, 'corn.'

Well, the badger has better reason than most creatures for shunning human beings. Enumerated of old among beast of the chase, sportsmen used not to be content with the gallant defence the badger makes against capture. The strength and valour of the beast, coupled with its extraordinary fortitude under pain (it dies mute, like a fox), instead of earning chivalrous consideration, caused it to be reserved for a more heartless fate. In Cox's *Gentleman's Recreation* (it is the edition of 1697 that lies before me), full instructions are given how to capture the animal, and among the instruments necessary for that purpose the 'gentleman' is counselled to have 'the clamps, whereby you may take a badger out alive to make sport therewith afterwards.' Sport! Happily the Legislature has made badger-drawing a criminal offence, like bull and bear baiting. So long ago as 1821 this villainous kind of cruelty was deprecated in Henry

Alken's great folio of *British Sports*, although that excellent artist illustrated the text with two vigorous illustrations of badger-drawing.

'The dogs,' he says, 'in the highest repute for this sport are bull terriers or *fixers*. The *jist* of the match and object of betting are the number of times the dog will draw the badger from his box within a given space of time, determined by the stop-watch. . . . It is recorded that the dog of a *gemman*—*homo generosus*, no doubt—drew a fresh, strong, and game badger seventy-four times in ten minutes!' Now, considering that 'drawing' could only be accomplished by the dog fixing his teeth in the lip or tender flesh of the badger's face, the pain suffered under every such operation must have been about equal to that caused by the extraction, without anæsthetics, of a molar tooth. The peculiar torment to which this innocent creature was habitually put long ago became proverbial, and every schoolboy understands what is meant by the verb 'to badger.'

Good traditional cause, therefore, has the badger to avoid the face of man, and it does so most effectively. Although it is the largest of our truly indigenous mammals, except the red and roe deer, it is probably that which is most seldom seen, even where it abounds, as it still does in many parts of England. It even lingers and thrives within the bounds of the metropolis, retaining its primeval quarters in Lord Mansfield's park of Kenwood, on the borders of Hampstead Heath. So far, therefore, it is a disappointing denizen of the wilds. Although, as aforesaid, I turned down a lusty family of five in my woods twenty years ago, and although I have reason to believe they bred in the strong earths which

they inhabited for many subsequent seasons, I have never seen one of them. For the last two or three years the earths have been deserted, and the 'bawsons' either have migrated to other lands, or, as I strongly suspect, have been massacred by the gamekeepers during the years that my shooting was let.

This raises the question: Are badgers justly classed as vermin? Do they injure either the farmer's crops or the landlord's game? I clung as long as I could to the pleasing belief that they were harmless creatures, but alas for the bawson! certain nocturnal deeds of blood committed during the present year (1906) have forced me to the contrary opinion. But before giving my own evidence for the prosecution, let us reverse the procedure usual in criminal cases, and put Mr. Alfred Pease in the witness-box for the defence. He wrote an interesting little monograph upon the badger a few years ago, and has spent many a summer night in ambush watching badgers in their haunts. His testimony is that their food is chiefly roots and insects, especially large beetles; but they will also eat rats and mice, when they can be caught, and they often dig up nests of young rabbits. In short, the diet of the badger is as catholic as that of a pig, with the addition, that he has a very sweet tooth for honey, having been known to enter gardens and upset hives, protected by his dense coat and thick skin against the stings of bees. As a master of foxhounds, Mr. Pease rejects the allegation that badgers destroy fox cubs. In fact, he gives a curious example of a united colony of foxes and badgers.

'The badgers had made a fine double set of earths on the north side of a hill in a neighbouring larch wood, where no

effort on my part to get foxes to breed and stay had succeeded. No sooner, however, was a colony of badgers established than foxes haunted the holes and covert. In a succession of years there was as certain to be a litter of fox cubs in the badger earth as a sunrise on the morrow. The foxes and badgers frequented both sets indiscriminately till March. When the vixen lay in, the badgers abandoned the set of holes where she was, and restricted themselves to the other set some twenty yards away.¹

Foxes are poor diggers, fain to avail themselves of the superior powers of these allies; but one year these allies fell out. Two vixens lay in at the badgers' expense, and reared litters of four and seven respectively, till the cubs were about one-third grown.

'There were then,' says Mr. Pease, 'to my knowledge, at least four badgers and twelve foxes in these two earths. On one or two occasions the stillness of the night was broken by the veriest pandemonium at the earth.' The hospitality of the badgers had been overtaxed. War broke out, and as badgers are fiercer biters than foxes, the intruders got the worst of it, and several were slain. Amicable relations were renewed in subsequent seasons, and 'all through the year there are foxes in the earth; and this spring (1898), as heretofore, a litter of cubs has been raised.'

And now let me bear sorrowful testimony for the prosecution. The badgers which I established at Monreith twenty years ago having disappeared as afore-said, the gentleman who rents most of my shooting thought he would indulge my hobby by turning down some more. Accordingly, early in the present year (1906), he released a fine pair of brocks in a pheasant cover,

¹ *The Badger: a Monograph* (p. 72), by Alfred Pease; London, 1898.

where they speedily excavated commodious earths. About midsummer, the keepers were dismayed by wholesale massacre committed by night upon the young pheasants in coops, and not upon them alone, but upon the nursing hens. The mischief was soon traced to the badgers; but, watch as they might, the keepers could never detect them in the act. Isolated coops, with a solitary hen in each, were put out encircled by traps. Master Brock was equal to that device. Somehow or another he got at the coop uninjured, threw the coop over upon the traps, and devoured the inmate. After that, I had no word to say in defence of my quondam friends. They were dug out of their earths and paid the penalty of evil-doers.

In one respect, however, the badger has been grossly maligned, having been made proverbial for his smell, and people who have never seen a live badger talk glibly of 'stinking like a badger.' It is true that the animal has a peculiar sac under the tail, whence is secreted a substance of strong and disagreeable odour; but it is a gross libel to attribute to the uncleanly habits of the badger that overpowering stench which too often exhales from the prison of one in captivity. A human being confined under similar conditions would be infinitely more offensive. In fact, the 'bawson' is a creature of scrupulously cleanly habits, being at pains to dig holes at some distance from the earths and bury that which most animals are content to leave on the surface. Most sincerely did I commiserate the filthy plight of a fine badger which I saw not long ago confined in the back yard of a country hotel. The beast would have kept its narrow den sweet and neat if it could, for badger earths are far superior in both these respects to fox earths; but it had been deprived

of all means of cleanliness, and the result must have been even more distressing to the prisoner than it was to its occasional human visitors.

For my own part, wild animals are interesting to me only in their native haunts; but those who care for pets find that badgers, rightly housed and cared for, are most companionable and docile creatures. The objection felt by the true lover of nature to keeping them in captivity is similar to that which applies to keeping birds in cages. In both cases the animal must be debarred from exercising the faculty in which it excels: the bird shall not fly; the badger shall not dig. These are the cardinal prison rules—fatal, in my opinion, to any satisfaction on the part of an understanding jailer. And what a wonderful digger is the badger! Twenty years ago I received a consignment of four one August morning—an old sow and three cubs. They had travelled all the way from Hampshire; the weather was intensely hot; the whole party seemed in the last stage of exhaustion. In fact, the old sow appeared to be on the point of death, lying motionless on her side with half-closed eyes. I had them put into a loose-box, with a plentiful supply of food, animal and vegetable, locked the door and took away the key, so that the beasts should have four-and-twenty hours to recruit before being turned into the woods. Next morning, when I returned, the place was in a fine mess. Much of the food had disappeared, and so had the badgers. The cobble pavement had been deeply dug out in several places. Baffled in that direction by the stone-wall foundations, the old sow had attacked the door, a sound and strong one, bitten a round hole through it, and made clean tracks. Eventually she took up her quarters in a

steep wood facing north, about a mile across country from her place of temporary detention, and formed earths there which continued to be inhabited for many years after.

XI

We know a lot more than our ancestors did, we moderns ;
 but the more we learn the deeper becomes our
 conviction that there remains a lot more to
 learn. Such was the reflection brought home
 to me lately by a question from a correspondent about a
 peculiarity in the structure of one of our most familiar
 birds. 'Can you tell me,' he asked, 'what is the purpose
 of the serrated inner edge of a heron's middle toe-nail ?'
 Now, had I only my own knowledge to rely on I must
 have confessed my ignorance at once, wrapping it up,
 perhaps, in some such delightful periphrasis as I once
 heard employed by a witness under cross-examination
 before a Parliamentary committee. He had been asked
 a question to which his plain reply must have been, 'I
 don't know'; but that would have given him too little
 time for reflection, so he said, 'The honourable member
 is now directing inquiry upon subject-matter, cognisance
 of which, on my part, is a matter of impossibility.' Well,
 I could not explain offhand why a heron should have a
 toe toothed like a saw, but methought it would be easy to
 dig the reason out of some book. Resource was had to
 the writings of the best authorities upon ornithology, only
 to find that while some of them ignore altogether the
 peculiar serration on the middle digit of the heron, others
 notice it without hazarding any conjecture as to its pur-
 pose or origin. I was reduced, therefore, to assign to this

mystery the simple, if unsatisfying, explanation offered by Dr. Watts as the reason why 'dogs delight to bark and bite.' To those who are disposed to pursue inquiry further, it may be pointed out that all the heron family, except the whalehead (*Balænoiceps*), possess this peculiarity. The bill of the heron is serrated for an obvious purpose—the capture of a slippery prey; but although I have closely watched through the glass herons catching fish, I have never detected them using a foot, either in the capture or in the disposal of the victim when caught. The bird stands motionless, mid-leg deep in the water, with neck outstretched and stiff, and gaze intently directed upon the shallows. The glaucous tints of its plumage harmonise so closely with the stones and water-tints around that it takes a sharp eye to pick the creature out when it is thus waiting. Suddenly, like a flash, the head with its powerful bayonet is darted under water, and it seldom happens that it is withdrawn without a silvery fish or wriggling eel. Having secured its prey, the bird turns towards the shore, perhaps stalks out on dry land, just as a human angler might do before unhooking a trout, tosses its head in the air, and the fish disappears down the gullet. Albeit nobody has discerned the purpose of the peculiar formation in the heron's foot, we may rest assured that such a purpose there is; for Nature never plays idle pranks, but is strictly utilitarian in all her designs.

It may not be out of place to observe the common misunderstanding that associates the herons (*Ardeidæ*) with the cranes (*Gruidæ*), a confusion easily arising out of the general similarity in form between the two families, but they belong to widely separated orders—the herons to that of the *Ciconiiformes* or stork-like birds, including

gannets, cormorants, pelicans, ibises, spoonbills, etc.; the storks belonging to the *Gruiformes* or crane-like birds, which comprise the rails, cranes, bustards, and many other outwardly dissimilar birds.

Now I have printed the above note at length, for it supplies an example of the amusement to be got out of hunting down the solution of an apparently simple phenomenon, and, at the same time, its difficulty. The note, much as it stands here, was communicated to a Scottish journal, without much hope of obtaining any light upon a peculiar feature in the heron's foot which hitherto had baffled the acumen of anatomists, biologists, and all the intellects which have been concentrated upon the structure and habits of birds. But I have had better luck than could have been reckoned on. A correspondent from Falkirk sends me a suggestion which commends itself as the simple but satisfactory solution of the puzzle. He believes that the function of the saw-like inner edge of the toe-nail is to prevent the foot slipping upon slimy surfaces when the bird goes a-fishing. Accuracy of aim is indispensable to the heron in pursuit of a darting, slippery prey, and such accuracy would be impossible without a secure foothold. Does any one wish to test the truth of this? Let him try to wade with smooth soles upon the rounded pebbles of a river channel or upon shingle coated with seaweed. He will find that it is all he can do to keep on his feet, let alone attempting to capture fish. All wading equipment must be heavily ironed; and while I thank my Falkirk correspondent for his timely suggestion, I blush for my own sluggish imagination which failed to recognise in the roughened toe-nail of the heron a congenital equivalent to human hob-nails.

XII

The extraordinary mildness of the winter of 1905-6 now drawing to a close must have been a grievous disappointment to curlers and skaters, but it has been the source of much rejoicing to those who love their gardens. It is true we cannot reckon ourselves out of the wood yet, knowing by experience how fiercely the month of March can redress the balance of temperature; but let it do what it may, it cannot rob us of the flowers we have had in unusual abundance through the dark months. Among these, two rhododendrons claim pre-eminence—to wit, *R. nobleanum*, a hybrid between the Himalayan *arboreum* and *R. caucasicum*, startling in the profusion and glowing crimson of its blossoms; and *R. præcox*, offspring of the northern Asian *dauricum* and *R. ciliatum*. *Præcox* is usually described as a dwarf shrub, and recommended for pot culture in a cool greenhouse; but the true place for it to display its beauty is the open air. A bush of this variety, seven feet high and nine feet through, began to flower with me about the New Year, and soon became one mass of bloom, the colour being true mauve or mallow tint, not the false violet hue which dressmakers term mauve. What though a single night of frost on February 4 ruined the display. We had enjoyed its loveliness for a full month.

Another fine winter bloomer is the sweet-scented *Berberis Bealii*. The noble, horny, strongly-spined foliage of this shrub renders it a choice ornament, when well grown, throughout the year; and in mild winters it crowns every shoot about Christmas-tide with clusters of sulphur-coloured flowers of delicious fragrance. Like the rhodo-

Winter
Flowers

dendrons aforesaid, this fine barberry suffered damage on the night of February 4, but in a curiously different way, for which it is not easy to account. The rhododendrons lost all their expanded blooms, which were nipped into colourless pulp; but the buds about to expand escaped unhurt, and are now renewing the display. In the barberry, on the other hand, the expanded blossoms escaped without injury; whereas the closed buds along the upper part of the spikes were blackened and will do no more for us this season.¹

This barberry, like all the rest of the family (and its name is legion), is a true sensitive plant, the seat of irritability being the base of the stamens. Insert a pin or a stem of grass gently into the flower, and you will see the stamens close sharply round the style. No doubt this is a provision for cross-fertilisation, the usual intruder being a fly or other insect, which, being bespattered with pollen, carries some of it with him, and deposits it on the stigma of the next flower he enters. In fact, the blow inflicted by the closing stamens is sufficiently smart to frighten away a timid or thin-skinned insect, and drive it to another flower.

Among the most constant of winter-flowering shrubs is the quaint witch-hazel, *Hamamelis arborea*, which never fails to set its sprays thickly with curious flowers like tiny orchids, with crimson or claret-coloured centres and crinkled yellow petals, so constituted as to set even severe frost at defiance. There are three or four other species of witch-hazel, the Asiatic *H. japonica* and *mollis*, and the American *H. virginica*, the last-named being the source

¹ In the present winter (1906-7) this barberry has sustained 19 degrees of dry frost with perfect impunity.

of the useful embrocation which bears its name; but none of these, unless it be *mollis*, is worth growing for ornament, and nurserymen are very apt to supply the less desirable species.

One shrub more I must mention, not because there is only one more, but because this one is so seldom met with, even in considerable collections—to wit, *Azara integrifolia*. A lovely evergreen, with sprays something like box, but of deep myrtle green, the underside of which is covered in winter with crowded golden flowers, deliciously fragrant. In cold districts it requires the protection of a wall, but in the south and west, in Ireland, and on the western Scottish coast, it is perfectly hardy and free, rising to a height of twelve or fifteen feet.

One of the most wearisome features in modern gardens, and especially in the part devoted to shrubbery, is the monotonous repetition of the same species—laurels, common rhododendrons, hollies, box—all very good in their way; but a little discrimination in choosing from the enormous variety of material adds infinitely to the interest of the most modest collection. At no season is this more conspicuously the case than it is in winter, when every flower, every spray of graceful foliage, is enhanced in value by the prevailing bareness.

Although the plants recommended above attain greatest luxuriance in mild districts near the sea, yet they are perfectly able to endure the rigours of less hospitable regions. Indeed, although mild seasons induce them to flower early, a really hard winter is better than one of a mixed character, which tempts them into growth and blossom, and then slashes them with sudden frost. A spell of seasonable cold about the New Year arrests sap

movement, and retards flowering until the danger of a severe check is over.

In a forward season like the present, it is interesting to observe the dates when garden plants first showed bloom in the open. I have noted the following this winter—

<i>Adonis amurensis</i> (a new species)	. December 18.
Bear's Foot (<i>Helleborus fatidus</i>)	. December 25.
Snowdrop . . . . .	. December 27.
<i>Cyclamen coum</i> . . . . .	. December 29.
Winter Aconite . . . . .	. January 2.
Carpathian Snowflake (<i>Leucoium vernum carpathicum</i>) . . . . .	. January 7.
Spring Heath (<i>Erica carnea</i>) . . . . .	. January 10.
<i>Eranthis cilicicus</i> (<i>Cilician aconite</i>) . . . . .	. January 20.
White Hepatica . . . . .	. January 20.
Blue Periwinkle . . . . .	. January 25.
<i>Scilla bifolia</i> . . . . .	. January 28.
Purple Crocus . . . . .	. January 27.
Yellow Crocus . . . . .	. January 29.

Besides these, we have had more than the usual allowance of garden primroses—crimson, white, mauve, and Wilson's blue—wallflowers (especially the priceless little double yellow), lungwort, and hybrid hellebores, the last being now as fully in flower as we are accustomed to see them in Lent, whence their name of Lent roses.

XIII

If it is a far cry to Loch Awe, it is a still further one to Strath Ullie. Much further, indeed, one may not fare without falling into the Pentland Firth. And it is a blind lottery what climate you find on arriving, for the land north of Moray Firth

lies under a different weather-system from the rest of Britain—seems so, anyhow, seeing that forecasts from the Meteorological Office carry neither promise nor warning to Penultimate Thule.

Dalnaspidal and Dalwhinnie were one wan waste of snow; the deer, poor wretches, cowering in the corries and down upon the flats along the line; the Boar and the Sow of Athol draped with winter to their very feet. A few hours later, when the train pulled up at the entrance to Strath Ullie, called in the English tongue Helmsdale, the soft westerly air breathed promise of precious spring; yet this was still February (1905).

As we drove up the strath to the lodge, all boded well for the morrow. High-shouldered Ben Urie, indeed, wore a snow mantle far down upon his flanks; but the strath was clear, the river holms green, and the birch woods showed the dusky purple flush of stirring sap. Curlews, lapwing, and golden plover were here already; often it is well on in March before they adventure in such high latitudes. Surely the early fish will be forward also, for there is the river in perfect trim for them.

Ay, but a river is a wayward thing, which may be the reason why Highlander and Lowlander alike give 'her' the feminine gender. There followed much rain in the night; warm rain, falling on upland snow, deranges all anticipation. The first words I heard next morning were a message from my host: 'There is three foot of spate, and she's very dirty; and I was to say breakfast would not be till nine o'clock.'

On a lowland river that would have settled all prospect of fishing for the day, but in Strath Ullie it is different. There is but one road in that happy valley, and never

a teaspoonful of mud on the whole length of it, nothing but coarse granite sand off which the rain runs clear; and the patches of cultivation are infinitesimal. The dirt of a high spate consists only of bank rubbish—branches, leaves, and sand—which clears away as soon as the water ceases to rise. By two o'clock 'she' had fallen six inches, leaving four feet six inches above summer level, but quite a good colour. Still it seemed fatuous to fling a salmon-fly into such a roaring torrent. My host, having both leisure and experience, declined to put it to the test; but I, whose days of liberty were few, pairs being hard to come by in Westminster, could not afford to let the offchance slip.

There was nothing sanguine in my thoughts as I picked out a fly for the occasion. Time was when flame-colour was deemed essential for the beguilement of spring salmon in the Helmsdale; gillies were dogmatic upon that, and sarcastic towards any headstrong Southron who suggested any other hue. But successful sceptics have undermined their simple faith; blue, green, and purple find equal favour now, and the angler is free to give his private fancy the rein. So I put up a Black Dog—a Tay Black Dog, which is as different from the Spey Black Dog as a Labrador from a curly-coated retriever.

That Dog swam through acres of water without attracting the slightest attention. It was drawn along slack edges of tossing streams, it floated over glassy 'tails,' it even displayed its sable and silver uniform in back currents from the main stream. All to no purpose. The sun had passed behind the shoulder of Ben Urie before I prepared for a trudge home.

The path skirted a pool which I had tried carefully

at starting, for it carried a ferry-boat below which it broadened out into a stretch of comparatively quiet water. There was still half an hour of daylight left; something bade me give the Dog another swim there.

Starting at the foot of the pool, I put out a long line and began 'backing it up,' *i.e.* taking two or three paces backwards upstream at every cast. At the second or third cast a fish came up, fastened, ran a turn or two, and was off. 'A dirty kelt,' thinks I to myself, and a few more casts brought me up to the ferry-boat—lo! I was fast again. This fish ran about for a bit and was landed, a lovely little springer. So was a second, and yet a third, all in exactly the same spot. Then darkness descended on the scene, and the Black Dog returned to his kennel. It was a busy half-hour, though the fish were but small—7½lb. to 9lb.

For so much does chance count in salmon-fishing. It was blind chance that prompted me to try that pool over again; lucky chance that a small shoal of salmon had rested awhile on the slack of the ford. Mischances there are also, about which any truthful fisherman could spin plenty of yarns, were it not for that sundial tendency of his to record none but the shining hours—mischances that freeze the blood at the moment and project gloomy shadows far over a man's future. It is the chance and mischance combined that give salmon-fishing its commanding charm. If one were able to go out any day and find and hook salmon with as much certainty as rabbits may be found and bowled over in a warren, it is not seven hundred miles of winter travel that one would undertake in pursuit of them, with the possibility of finding the river frozen from bank to brae, or a mass of floating

'grue'—mischance that has happened to the present writer more often than it boots to record.

XIV

There has been discussion of late in the *Field* and other journals about the Corsican pine (*Pinus laricio*), whether it is immune or not from rabbits. Now there is not a green thing which rabbits will not gnaw when it is first planted. I believe that if there were but a single rabbit in the parish and one were to plant out aloes of painted tin, such as bedeck dismally the environs of hydropathic establishments and marine hotels of the baser sort, that solitary rabbit would whet his teeth upon them. Rabbits are rodents, and if rodent animals don't keep constantly gnawing, their teeth grow to immoderate length. Consequently, if there is nothing in the place more esculent than Corsican pines, rabbits will set to at these. But they won't persevere; they will not feed on them, but rather will migrate elsewhere. For there is something in the Corsican pine, not poisonous to rabbits probably, but distinctly unpalatable; a property peculiar to Corsicans, for the Austrian pine, which Gadlicher considered to be merely a variety of the Corsican, the accursed rabbit will devour to the last needle.

Anybody who is in doubt about the rabbit-resisting property of the Corsican pine should visit these extensive sandhills near Holkham and Wells which the Earl of Leicester has been planting up for the last fifty years. Here may be seen many miles of seaside woodland, composed of four species of conifer—Austrian, Corsican, pinaster, and Scots pine. Not only has the Corsican

surpassed all the others in height and average girth, but parts of the ground are thickly clothed with its seedlings. The other three species seed freely, but I could not find a single young plant of any of them. The hares and rabbits will not suffer them to grow.

The Corsican pine is one of the noblest of European conifers, and economically a more valuable tree than any of them, except the larch. One hardly dare plant the larch now, so fatal are the ravages of its special disease.¹ The Corsicans are most robust and healthy in the British climate, but they are not favourites with our foresters, such a large percentage die after planting-out. They are deficient in fibrous roots, but this disadvantage may be overcome by *deferring planting to the latest possible period in spring*. If Corsicans are planted in April when growth has started, or even during the first fortnight of May, they take on as kindly as Scots pines and grow away as if nothing had happened. As to the quality of the timber, it is said to be almost equal to larch, even in a young state. It is recorded how Napoleon, himself a Corsican, insisted upon building battleships of timber from his native forests, against the remonstrance of his admiralty. They floated all right and sailed very well; it was only when they met British oak-built seventy-fours that the trouble began; for Corsican pine, like all kinds of deal, splinters badly under cannon fire, dealing death and wounds among gunners and seamen.

As the planting season is upon us, let me bring another

¹ This year (1906) I have found three Corsican pines, from fifteen to twenty-two years planted, affected by larch disease (*Peziza Wilkommii*), but in two instances the trees had apparently suffered no damage from it. The third specimen, which I sent to Kew for identification, was a suppressed tree.

pine to the notice of those concerned. There is such a bewildering variety to choose from, the ends of the earth having been ransacked to furnish us with novelties, that it takes half a lifetime to form any notion, however imperfect, as to their relative worth. Two-and-thirty years ago I returned from the Engadine delighted, as all tourists must be, with the sturdy spires of the 'Aralla' or Swiss stone pine (*Pinus cembra*), and of this species I straight-way ordered some from a nurseryman. Now the Aralla is a tree of very deliberate growth; twenty feet in thirty years is its utmost speed, fifteen feet is what may be looked for. The young plants which I purchased resembled the Aralla in foliage, but they behaved as no tree of that species ever did. Eighteen inches a year they shot up with utmost regularity, and it was not till they were far above my head that I found they were not Arallas at all, but natives of a different continent. They were *Pinus monticola* from northern California, where they grow to a height of one hundred feet and more, producing white, fine-grained, and tough deal. They resemble the Weymouth pine; in fact Nuttall classified them as a mountain variety of that species; but in every respect they are far nobler trees than the Weymouth, of fine, boldly columnar growth, and without the Weymouth's tendency to send up many leaders. The Weymouth dislikes our western seaboard; but there stand the *Monticolas*, sixty feet high in thirty-two years, defying the Atlantic gales, and I wish I had a hundred acres planted with nothing else.¹

¹ At Murthly and elsewhere, I am told, *Pinus monticola* has succumbed to disease, profusely bleeding from stem and branches, but there are no signs of ill-health in my trees.

After all, there is no pine nobler than our native Scots or so beautiful in maturity. See those splendid fellows in the Duke of Atholl's park at Dunkeld, girthing thirteen feet at four feet from the ground, and soaring fifty feet clean before the stem throws out a branch, clothed in that ruddy bark which distinguishes this species from every other conifer except the Japanese.

March

XV

Is it permissible for a mere, and I hope modest, layman
Ministers to criticise the recreations of the Scottish
and their clergy, or rather to express surprise and regret
Gardens for their neglect, as a body (there are notable
exceptions) of one of the surest sources of recreation? I
refer to the relative rarity in Scotland of the country
parson who is an enthusiastic gardener. It is far other-
wise in England, where, not to mention names so illus-
trious in horticulture as Canon Ellacombe, Mr. Engleheart,
and the late Dean Hole, nothing is commoner than to
find the glebe garden rich in variety and exemplary in
culture both of flowers and fruits. It is difficult to
account for this; neither soil nor climate may bear the
blame in the north. Blame, did I say? Be it far from
thy servant to impute blame; but he may be suffered to
express surprise at the general neglect of one of the
surest and most enduring sources of pleasure and interest
open to a class whose profession keeps them in the
country, and confined to one spot in the country, with
brief intervals, from year's end to year's end. It distresses
me to see this neglect of a means for brightening the
routine of duty by a keen intellectual pleasure, and for
repairing the lassitude of study by spells of exciting open-
air work.

Exciting? yes, that is the word; exhilarating is all too tepid a term to express the emotion aroused by the crises of inflorescence and the hazards of fertilisation. *Experto crede!* Have I not passed that way? It was my lot to spend many of my early years in a remote and exceedingly quiet country neighbourhood, and of all the resources of amusement and occupation which such a life affords, there is none to which I look back with such profound gratitude as to the garden. Gardening was not in those days the fashionable passion which it has now become. One had to find out a good deal for oneself; it is amusing to hear and read about the discoveries made by enthusiasts in these latter days, as if they were really new.

It confirms the belief that country clergymen in general do not act wisely in neglecting their gardens to note the extraordinary zest which those few add to their lives who have acquired and indulged enthusiasm in horticulture. There is not a week—not a day—in the whole year in which the garden does not claim attention and reward it in one way or another. The reward comes in the form of pleasure—how pure and how sure only those may testify who have tested it. Let those who have not done so open to themselves a new and permanent avenue to enjoyment by studying a little work published in the days of our great-grandsires—Paterson's *The Manse Garden*.

James Thomson of *The Seasons* was a son of the manse, and his father may have been a diligent and successful gardener; but James's excursions in horticulture appear to have been of a parasitic kind. It is recorded of him that his notion of exquisite sensation was

to stroll with his hands in his pockets biting the ripe side of the peaches as they hung upon a sunny wall.

XVI

It has always appeared somewhat of a mystery why rabbits and other herbivorous rodents greedily devour certain plants, and avoid others of a kindred sort. Your copse may be starred in April with wild yellow primroses; rabbits, however numerous, will never nibble leaf or flower. But plant out the crimson and mauve primroses from your garden, which are merely sports from the wild species, and they will speedily be gnawed to the quick. In such a case it is not improbable that cultivation may have purged the wild plant of some noxious flavour or poisonous property which protected it; but the puzzle is more obscure when similar discrimination is shown between wild plants which are nearly akin. In the iris family, for instance, the common yellow iris and the wood iris or gladdon are absolutely immune from rabbits and hares, whereas the crocus never gets a chance while there is a rabbit left aboveground. Again, the only constant difference distinguishing the amaryllis family from the iris family is that the blossoms of the former have six stamens, those of the latter only three. Yet rabbits scrupulously avoid all our native amaryllids—the daffodil, the snowdrop, and the snowflake. Even mice and rats, which dig down to the bulbs of crocus with such pestilent pertinacity, leave those of daffodil severely alone. In the lily family, so closely akin to both amaryllis and iris, the star of Bethlehem, lily of the valley, the wild tulip, and the

squills (including the blue hyacinth) are left untouched, but chagrin awaits the amateur who tries to deck his woodland paths with grape hyacinths. The pestilent rabbit goes for them straight.

In regard to daffodils, they appear to be protected, not by any chemical poison, but by a purely mechanical agency, which has been brought to light by the researches of the Rev. W. Wilks, editor of the Royal Horticultural Society's *Journal*. Last February (1905) he heard from a nurseryman, who grows daffodils for the flower trade, that men and boys employed to gather the flowers suffered from poisoned hands, and asking for a remedy for the poison. He explained that after the men had been at work a little while, their hands became sore, gatherings forming under the finger-nails and wherever the skin was broken or chapped. This statement having been confirmed by another daffodil grower, one of the largest in the trade, Mr. Wilks instituted research into the cause, and came to the conclusion that the irritant in the sap of the daffodil is not a true poison at all, but that the mischief is caused by small crystals of lime, called *raphides*, of which the sap is full. He recommends that people employed to gather daffodils (and it might surprise some persons to learn the scale of that industry) should oil their hands before setting to work, and rub tallow under their finger-nails.

The florist has been very busy of late years with daffodils and other species of narcissus, and the new hybrids offered in the bulb catalogues are bewildering in number and variety. Some of them are very beautiful, no doubt, but for my own part I am content with the natural species. Commonest of all, and inferior to none,

are Shakespeare's 'daffodils, that come before the swallows dare, and take the winds of March with beauty.' Through its name, this flower has been associated with Homer's asphodel, 'daffodil' being a contraction from the old French *fleur d'asphodille*. Possibly Homer had some kind of narcissus in his mind, although Lucian and later writers applied the name to a lilywort with an edible root, which Linnæus confirmed by calling that genus *Asphodelus*. We also use the name to denote that lovely little lilywort which enlivens our northern mosses in July with its spikes of golden flowers and scarlet anthers, the bog asphodel (*Narthecium*). The common daffodil is the only narcissus which we can claim as a native of Britain, except the two-flowered narcissus—'primrose-peerless,' as country folk call it—(*N. biflorus*), bearing a couple of sweet, pale straw-coloured or white flowers on each stalk, which is probably indigenous in the extreme south and south-west of England and Ireland.

Besides these two, there are a few distinct exotic species, which nobody should neglect who has control of so much as a quarter of an acre of ground. One of the oldest settlers in this country is the nonpareil (*N. incomparabilis*), a native of Spain and the Tyrol, with its double form upon which our forefathers bestowed the too homely title butter-and-eggs. Another species, from the Mediterranean region, which takes kindly to our lawns and woodlands, is the poet's narcissus (*N. poeticus*). Flowering latest of all the daffodils, in May, when there is such competition in floral beauty, this flower scarcely commands the admiration which is its due; yet I think, were I asked to name the daintiest combination of colour, form, and grace to be found in flowering herbs, I should

give the palm to the poet's narcissus. The perianth of marble white, surrounding the golden cup with its crimped scarlet margin, is a design which unites simplicity and splendour in a degree hardly to be matched among the flowers of the field; and the effect is enhanced by the poise of the blossom on a stem of liberal stature.

But there is no end to it, when one begins prosing about the beauty of favourite flowers. Let me only add that, besides the above-named kinds, which thrive abundantly if planted out in wild ground or shrub lands, there are at least five or six species, which should be given favoured places in the border—namely, the campernelle (*N. odorus*), with its cluster of clear golden flowers and delicious fragrance; the still more fragrant jonquil (*N. jonquilla*); and the polyanthus narcissus (*N. tazetta*), which has been cultivated into every imaginable combination of yellow, orange, and white. Add to these the hoop-petticoat (*N. bulbocodium*) and the diminutive *N. minimus*, 'whose nose,' as Parkinson wrote more than three centuries ago, 'doth mostly rest upon the ground,' and you will have plenty to rejoice your eyes during the long weeks when spring is hesitating about making good her footing. Afterwards you can decide whether anything is to be gained by acquiring a number of the newer species.

One chief merit of the daffodil—including under that term the great majority of species of narcissus—is its robust constitution. It is not liable to those fungoid attacks which are the despair of lily-growers. So far as I am aware, the only insect enemy it has is a dipterous fly known as *Criarhina* or *Merodon narcissi*. It is not known where it deposits its eggs, probably at the base of the leaves near the crown of the bulb. Anyhow, during

late summer and autumn the maggot is found within the bulb, of which it devours the heart, escaping in November into the surrounding soil, where it passes the winter in the pupa state, emerging as a perfect fly in the following spring. Luckily, the humid climate of Great Britain is unfavourable to the propagation of this creature; but the maggot may often be detected in bulbs imported from the south of Europe, and, needless to say, should be committed to the flames at once.

‘Let him,’ said the prophet Mohammed, ‘let him who hath two loaves sell one, and buy of the flower narcissus: for bread is but food for the body, but the narcissus feedeth the soul.’ Yet it is passing strange how absolutely insensible certain minds are to the beauties of nature, and one cannot but wonder what compensating faculty such persons possess to indemnify them for being cut off from one of the sweetest sources of pleasure. One of the most striking instances, not only of indifference to beauty, but inability to perceive it, was furnished to me by a Scottish clergyman, and daffodils supplied the occasion for the manifestation. I was attending service in his parish church one bright Sabbath in March, and was dismayed to see that the daffodils, which crowded all the kirkyard and decked the manse grounds with gold, had been mowed down. There they lay in swathes, withering in the sun, a piteous sight to behold. I waited after service to inquire the meaning of this, pointing out to my reverend friend that not only was the display ruined for this year, but that the bulbs would not flower in the following spring after such treatment. ‘That was exactly my intention in having them cut,’ replied the minister; ‘Mrs. A—— (naming his wife) considers yellow

a vulgar colour, and there was so much of it about that she asked me to put the flowers down.' The strange thing was that my friend was, in many respects, a man cultivated above his fellows, not unversed in the Greek poets, and with a catholic taste in literature. Be sure that I bombarded him with Shakespeare, Herrick, and Wordsworth. I even protested against common flowers being condemned as vulgar, recalling the gentle rebuke addressed by Sir Walter Scott to his daughter, when she declared she could not endure something because it was vulgar. 'My dear,' said he, 'you speak like a very young lady. Do you know, after all, the meaning of this word *vulgar*? It is only *common*; nothing that is common, except wickedness, can deserve to be spoken of with contempt. When you have lived to my years, you will be disposed to agree with me in thanking God that nothing really worth having or caring about in this world is *uncommon*.'

Well, the minister and his good lady passed hence years ago. It may be that their spirits, wandering amid Homer's meads of asphodel, have wakened ere this to a new sense of beauty in leaf and flower. Meanwhile, the daffodils in the old kirkyard have recovered from the harsh treatment, and bear annual tribute of goblin gold as lavishly as ever.

XVII

Sometimes I feel ashamed of the random and superficial quality of these notes, suggested as they generally are by the flash of a wing or the gleam of a flower; yet they bring me so many corre-

The Curlew

spondents from far and near as to reassure me, and to seduce me into further garrulity. This time the incentive comes from the southern hemisphere, in the shape of a letter from a brother Scot settled as a farmer in the Transvaal. 'The only home birds I have come across here likely to be migratory (always excepting the swallow) was the good old whaup twice and the cuckoo once. I startled the whaup out of some rushes on the edge of a pan near Kimberley. He only gave the ordinary winter *wheep*, and did not venture a warble or shrill. The cuckoo gave no sound, but I was so near there was no mistaking his shape and plumage. I found him in a bosky dell on a mountain-side. . . . It touches a Gallovidian on the tender chords of sentiment.'

Full well I know the farm where the writer was reared—a gray-roofed, white-walled, solid dwelling set in a green fey upon a steep, where the brown moorland falls steeply away to the western sea; and well can I imagine how the whaup's shrill alarm-note set many old memories astir in the mind of this Galloway lad, for there is no bird more closely associated with the westland than is the whaup. It may even have been that this very curlew, plying its quaint, bent bill among the ooze at Kimberley, was bred upon the moors where my correspondent first saw light; for it is the invariable practice of migratory fowl to pass to the northernmost limit of their annual migration before nesting, and the curlew's winter range extends far south of the equator. For a number of years past I have gone to Caithness or Sutherland for the early salmon-fishing, and often arrive there before the curlews. The whole mass of these birds and the peewits move southward in autumn, so far that not

even the rearguard of them remains north of a line corresponding roughly with the Moray Firth. They generally come back together, the first token of approaching spring in Helmsdale strath being the arrival of small companies of each about the middle of February.

Curlews may be reckoned among the surest friends of the farmer, for they desert the shore in spring until their young brood are able to accompany them thither in late summer. During the nesting season on the moors and rough arable ground they devour immense quantities of caterpillars, grubs, and other insects. The chicks are delightful little creatures, with short and blunt bills, betraying no resemblance to those of their parents. It is during adolescence that these features develop to the prodigious proportions so conspicuous in old curlews. In this respect they resemble the shoveller duck, which as a duckling carries a bill as neatly shaped as that of any mallard. The art of wood-cutting has been done to death by cheap processes of various degrees of merit and demerit. More's the pity! as anybody will exclaim on turning to the woodcut of a young curlew in Yarrell's *British Birds*. For fidelity of portraiture and delicacy of execution, I know of nothing in wood-engraving superior to this, executed before the invention of photography.

Nobody can have given much attention to the habits of fowls of the air without noticing the degrees of wariness which distinguish different species of the same family. In no group of birds is this more remarkable than in the plovers. The peewit, or green plover, and the golden plover may be seen constantly associated together on the feeding-grounds; but the behaviour of the two species is in strong contrast. The peewit is far

the bolder bird, although one has only to look at the poulterers' shops in great towns to realise how much cause it has to distrust the approach of a human being. In spring and summer the parent birds will wheel and swoop within a few yards of a man's head, endeavouring with piercing cries to divert his attention from their young. But the golden plover is among the shyest of feathered creatures. Even in the nesting season, though it betrays heartrending anxiety for the safety of its brood, it never allows a human intruder to come within gunshot; flitting from knoll to knoll at a safe distance, it relies on its incessant, melancholy pipe to lure the wayfarer on the moors away from the point of danger. As for the curlew, it is as difficult to approach as a wild goose, which is to say a good deal, for a wild goose requires as careful stalking as a red stag, with as nice consideration of wind-direction. The curlew is always restless and nervous; goodness only knows when it takes a nap, for it is as much nocturnal as diurnal in its habits. Living as I do between moorland and the sea, with many a lochan and plash in the neighbourhood, I am accustomed to hear the whaup's guiding cry, even in the mirkest night, as he wings his way with his 'lang-nebbit' kin to fresh feeding-grounds. Delightful birds they are, worthy of the kinliest treatment, which, alas! they don't always get; for there are few young sportsmen so forbearing as to resist the temptation to let drive at a flock of curlews at flight time. The sporting code has become less discriminating since I was a lad. I was brought up to regard golden plover as fair and most desirable game; but peewits and curlews were considered sacred by all except Cockney marksmen. Wherefore, though I have

accounted for golden plover by the score, I never shot but one peewit in my life, and my hands are clean from the blood of the whaup.

XVIII

The mischief wrought by professional collectors working for affluent amateurs is incalculable and very difficult to check, especially that form of industry which ministers to the petty and ignorant vanity of possessing British specimens of rare animals, eggs, and plants. Good naturalists are satisfied with the knowledge that the osprey, for instance, still rears its brood in two or three of its immemorial, and once numerous, nesting stations in Scotland. His concern is, not to plunder the eyrie, but to protect it from plunder. An osprey's egg laid in a land where ospreys abound will serve the purpose of his collection every whit as well as one of the dozen eggs or so annually laid in the United Kingdom. But the pseudo-naturalist—the amateur collector—is a mere *virtuoso*, and is willing to pay many times more for a British-laid egg than for a foreign one. Very likely he could not name at sight more than a score or two of the three hundred and odd species of British birds. He is quite indifferent to the fate of a species; if it becomes extinct, like the great awk, so much the keener will be the envy of his rivals if he has secured a 'clutch' of its eggs before it disappeared. All his concern is to fill up blanks in his series, and his pursuit has as much relation to true science as stamp-collecting, and no more.

Saint Kilda
and her
Wren

Some bitter reflections against persons of this class and

their jackals are suggested by recent proceedings in a well-known auction room in Covent Garden (1903), when a number of rare British-laid eggs were offered for sale. The Society for the Protection of Birds exercised its usual praiseworthy vigilance. The secretary wrote, warning the auctioneer that certain lots had been obtained in contravention of the Wild Birds Preservation Acts, and could not legally be exposed for sale. Consequently these lots were withdrawn; but the mischief had been done. The contraband eggs had been well advertised, and no doubt found their way, at exorbitant prices, into the cabinets of unscrupulous amateurs.

Among those publicly sold were some of the stockdove, specially commended as having been 'laid by the last pair breeding at Portland.' Of the Cornish chough, a beautiful and steadily disappearing bird, five eggs were offered from the coast of Antrim, and four of the red-necked phalarope from North Ronaldshay. Melancholy and exasperating though it be that these lonely shores should be ransacked annually by Cockney collectors, worse remains to be told. Among all species of British birds, two only are reckoned as exclusively endemic—to be found nowhere else in the world. One of these is the red grouse, about whose future there need be no apprehension. The other is a wren, differing from the brown wren of English hedgerows chiefly in the structure and dimensions of its legs and feet, which have developed certain peculiarities from long isolation in the rocky solitude of St. Kilda, where only it is to be found. It is doubtful whether Mr. Seebohm was justified in assigning specific rank to this little bird, as he did in 1884 under the title *Troglodytes hirtensis*, in allusion to Hirta, the

Gaelic name of the island. There can be little doubt that it would breed freely with the common wren (*T. parvulus*), and the offspring would probably prove fertile, thereby obliterating one of the barriers which separate species; but at all events the St. Kilda wren is a distinct type which ought not to be allowed to disappear. It is in that distinction that the chief peril lurks, for the collector can command fifty times the price for the egg of a St. Kilda wren than any one would give for a common wren's egg, and the price ever rises as the birds get scarcer. A devastating raid was made upon the island in the spring of 1903. Collectors swooped down and, it is believed, grabbed every egg upon the island, besides shooting the parent birds for the taxidermist. Twenty-three eggs, probably the whole season's crop, were sold at the above-mentioned auction for £2, 15s.

It may be asked why the Inverness-shire County Council did not intervene to stay the destruction? The answer is that, albeit St. Kilda is reckoned as part of Inverness-shire, it was specially exempted from the provisions of the Wild Birds Preservation Acts out of consideration for the natives, who depend largely for their food-supply upon sea-fowl breeding in their cliffs. It was permissible, therefore, to take and sell all and sundry eggs that might be found upon that ocean hermitage, and the St. Kilda wren suffered with the rest from an unforeseen cause.

Now, although probably every nest on the main isle of St. Kilda was ransacked in that raid of 1903, rough weather made access impossible to an adjacent islet, where a few pairs of wrens are believed to survive. I conceived the chivalrous, or, as most persons may con-

sider it, the quixotic idea of obtaining legislative protection for these. *De minimis non curat lex*—how was it possible to avoid ridicule in framing an Act of Parliament in the interest of one of the tiniest of warm-blooded animals, of which, probably, not more than a dozen pairs remained in existence?

Howbeit, I have always found the House of Commons very sympathetic in regard to matters affecting wild animals, so I framed a bill to bring St. Kilda under the scope of the Wild Birds Protection Acts, with special exemption of those species useful for food. Not even a pigmy, methought, could make a breakfast of wrens' eggs.

It is easy enough to get leave to introduce a bill into Parliament and get it read a first time, no matter what the subject thereof may be; but it is a different job to obtain for it a second reading. The Irish members are ever vigilant to oppose anything coming from a Unionist source, and unless they could be conciliated, there was no chance whatever for my little measure. So I went off to Mr. —, the Nationalist Whip, and told him my purpose, explained that it was absolutely non-political, and begged him to get Mr. Redmond's favour for the bill.

'Well,' said he, 'I'll not object to your bill, Sir Herbert, if you'll persuade Mr. Balfour to allow a little bill of me own to go through.'

'What bill is that?' I asked.

'A bill to emancipate the Catholics of Ireland,' he replied.

'I thought that was all settled in 1828,' said I.

'So it was in part,' he said, 'but they left a big part

behind, ye see, and it's only plain justice we're wanting now.'

'Well, there is this difference, Mr. ——,' I argued. 'So far as I understand, there is no danger of Catholics being exterminated in Ireland, whereas it is a matter of life and death with my little wren.'

'Ah well, Sir Herbert,' he answered laughing; 'as you put it so pleasantly, it's not meself will stand in the way of your bill.'

And so the fight was won; the bill went through all its stages *nemine contradicente*, and if there be any wrens still fluttering about the caves of St. Kilda, they do so under the ægis of the law.

XIX

Not cockerow nor the robin's wintry trill is a sound more closely associated with English homesteads and Scottish 'policies' than is the cawing of rooks. All of us, however unconsciously, love to listen to it, for it brings to mind two periods peculiarly delectable in country life—the annual period of energy, windy March weather when the rooks are busy among the bare, swaying boughs; and the daily period of cessation from toil, when the labourer wends homeward, and overhead the sable throng fills the air with soothing clamour. Nevertheless the popularity of the rook has been seriously undermined of late years. Farmers and sportsmen, combined for once in a common object, have declared war against him, and his unfeathered champions have been hard pressed in maintaining his defence. Farmers' clubs in the north have proscribed rooks because

**Rooks,
and their
Morals**

of the damage wrought upon newly-singled turnips and ripe grain, and many a rookery has been condemned to destruction by game preservers, because these colonies harbour some proportion of egg stealers. The truth is that rook nature, like human nature, 'is a mingle yarn, good and ill together,' and a systematic attempt has been undertaken lately to ascertain which of the two preponderates in the average rook.

But the attempt has not been made in this country. When we Britishers are in doubt on a matter of this kind, we write to the newspapers, and a vast mass of correspondence sometimes follows, till editors decline to print any more, and no conclusion is arrived at. They manage things differently in Germany. With the patience and methodical diligence of his nation, Dr. Hollrung of Halle has applied himself to investigating this problem during eleven consecutive years, 1895-1905, performing a *post mortem* upon the carcasses of no fewer than 4030 rooks, rather more than one rook a day, and carefully analysing the contents of their gizzards. He has now presented his report, which he claims as reassuring to the agriculture interest, though it does not touch one of the chief grounds of the farmers' complaint, namely, the uprooting of turnips and other plants. The fact that this is done in pursuit of wire-worms, leather grubs, and other hurtful creatures, does not make less grievous the injury to the crop, seeing that twenty plants may be torn out of the drills before a grub is unearthed beneath the twenty-first. The result of Dr. Hollrung's researches is given by him in tabular form, and, if it could be accepted as a correct balance-sheet, tells somewhat in favour of the rook. Unluckily it will not pass the audit of any field naturalist



The Major Oak, Sherwood Forest.

LONDON: EDWARD ALMOND, 1907



of moderate experience. Leaving out the articles found least frequently in the gizzards of his 4030 rooks, he presents the account as follows, classing all insects as injurious to agriculture.

<i>Credit.</i>		<i>Debit.</i>	
Cockchafers . . .	2,222	Sprouted {	Wheat . 15,578 grains
Cockchafer grubs . . .	2,264		Barley . 10,465 "
Click Beetles . . .	2,307		Oats . 12,787 "
Click larvæ (wireworms)	1,589		Maize . 987 "
Weevils . . .	14,710		Buckwheat 1,777 "
*Caterpillars . . .	9,126		Potatoes . 587 "
Leather grubs (larvæ of		Unsprouted {	Barley . 247 "
<i>Tipula</i> , or Daddy			Maize . 40 "
Long-legs) . . .	3,411		Rye . 358 "
*Tortoise beetle (<i>Cassida</i>)	2,062		
Leaf beetles (<i>Chrysomelidæ</i>) . . .	2,113		
<i>Phyllopertha Anisoplia</i> ,			
<i>Hoplia</i> . . .	1,717		
*Burying and carrion			
beetles (<i>Silpha</i>) . . .	984		
*Hair-gnat grubs . . .	406		
*Corn - ground beetle			
(<i>Zabrus Gibbus</i>) . . .	86		

Now I have starred with an asterisk certain of the creatures set by Dr. Hollrung on the credit side of the account, because while the injury done by some of them is infinitesimal or doubtful, others are positively friendly to the farmer. For instance out of the 9126 caterpillars how many were species feeding upon cultivated plants? The larvæ of many of our showiest butterflies and moths have no use for the delicate shoots of young wheat, or the succulent leaves of cabbage or turnip. To mention a few only, the caterpillars of the Peacock butterfly, the small Tortoiseshell, and the Red Admiral subsist exclusively upon

nettles, a diet which nobody will grudge them. The great family of the Fritillaries feed upon various kinds of wild-flowers, and the grub of the Painted Lady upon thistles, varied occasionally with nettles. Of the hawk-moths, only the Great Death's Head can be regarded with jealousy by the farmer, feeding as it does upon leaves of the potato; and Death's Heads are of such rare occurrence in this country that nobody can show two penn'orth of damage from their agency as caterpillars. All the other hawk-moths browse upon the leaves of trees or weeds. In fact, the only caterpillars that do any appreciable damage to farm or garden in the United Kingdom are those of the large and small white butterflies, and some of the moths, such as the pretty Magpie or Currant Moth.

I am not aware that anything has been proved to the discredit of the Tortoise beetle, that creature of brilliant shining armour, whose larva has the strange habit of covering itself with a greatcoat formed out of its own excrement. Of the good of *Phyllopertha*, *Anisoplia*, and *Hoplia* I cannot speak, having no information on the subject; but the burying beetles (*Necrophorus*) and the carrion beetles (*Silpha*) contain but one mischievous member in their families (*Silpha opaca*) which has abandoned the universally carnivorous diet of its relatives and attacks the sugar beet, which is not grown in Great Britain. All the others must be accounted beneficial in their operations, subsisting almost exclusively on decomposing animal or vegetable matter, though a few species attack and devour other land insects. In respect of the hair-gnats (*Bibio*), which Dr. Hollrung reckons injurious, Mr. David Sharp's opinion may be quoted as that of a good and recent authority—

‘Owing to the great numbers in which the species of *Bibionidæ* sometimes appear, these insects have been supposed to be very injurious. Careful inquiry, however, exculpates them as doers of serious injury, though *Dilophus febrilis*, a so-called fever fly, appears to be really injurious in this country when it multiplies excessively, by eating the roots of the hop-plant.’

Rooks cannot help us against *Dilophus*, as the grubs are beyond their reach.

Lastly the corn-ground beetle *Zabrus* belongs to a fiercely predaceous family, which, both as *larvæ* and perfect insects, attack worms, grubs, and soft-bodied insects. It is true that *Zabrus* sometimes feasts on growing corn, but so does the rook itself.

It is evident, I think, that Dr. Hollrung has failed to re-establish the rook’s character in relation to agriculture; indeed he concludes his report with some observations highly creditable to his impartiality. While claiming for them approval for their diligence in hunting up insect pests, he admits that they are omnivorous; that they are harmful to game preserving from their partiality for eggs; that ‘in the neighbourhood of rookeries the harm done easily outweighs the good’; that their numbers should be kept within reasonable limit, and that farmers ought to co-operate to that end.

Our own Board of Agriculture, in noticing in their journal for last *October* Dr. Hollrung’s report, strongly support this recommendation; and the necessity for judiciously repressive measures is enforced by Mr. J. Sparrow Worth in a letter to the *Field* newspaper of 8th December—

‘Within the last few years I have killed some thousands, a great many of which I have opened and examined, and have

never once seen a grub or a wireworm in one; once or twice I have found a caterpillar of a butterfly, and sometimes I find the remains of a few beetles, but that is seldom. I have examined a few old rooks at nesting time, and found their pouches filled with ordinary earth-worms and nothing else. The damage rooks do to agriculture is something enormous, and in my estimation they are of little or no benefit to us whatever. They swoop down on our new-sown corn in countless numbers, and destroy a crop in a very short time, doing most damage to wheat just as the blade is coming through the ground. The potato crop also is seriously damaged by them. I have killed and examined a great number at that season, and seldom ever found anything inside but chips of young tubers, and stalks that have been attacked by rooks bear no bulbs. It is difficult to estimate the damage done every year by rooks to agriculture, but if the owners of rookeries paid a tax of £1 per nest, I believe it would only partly pay for the loss. These birds are over protected, they take little or no notice of anything or anybody, and it would take a lot of guns to keep them off our crops. Again, the damage they do our ricks is serious. They make holes in the roofs and let the rain into the tops, which quite spoils several bags in most of them.'

XX

The publication of the ninth and penultimate volume of the *Cambridge Natural History*¹ marks the approaching end of a work containing the condensation of such an amount of research and the harvest of so many intellects as to deserve a word of grateful recognition. The series is the field-naturalist's indispensable *vade-mecum*, or to speak more accurately, work of reference; for it would be inconvenient to move about with ten volumes, each of six hundred and fifty pages.

¹ London, Macmillan and Co., Limited.

The different groups of animated nature have been committed to the care of specialists in each; and the result is a compendium wherein every branch of zoology is brought well up to date. Man, being an arrogant and self-confident mammal, may demur to the place assigned to him in the scale of life by modern science. If he turns to the volume on *Mammalia*, he will find himself at the top of the class still, which is satisfactory so far; but there is a sinister creature, which receives a *proxime accessit*, treading uncomfortably close upon genuine human heels.

Luckily the animal, presumably truculent, is only known now in a fossil and highly fragmentary condition, and, as his presence has not yet been detected in British territory, it may be assumed that he will not claim representation at the coming Colonial Conference.

When Haeckel defined the gap between man and other mammals he gave the name of *Pithecanthropus*, or Ape-man, to a hypothetical creature which *must* have filled it once; since which M. Dubois has discovered remains of the missing link in the Pliocene or early Pleistocene deposits of Java. Part of a skull, two teeth, and one thigh-bone, badly diseased, scarcely suffice to decide whether their late owners should be admitted to the *Hominidæ*, or Man family, or relegated to the *Simiidæ*, or Ape family. Meanwhile, men of science have given themselves and ourselves the benefit of the doubt. According to modern classification the *Hominidæ* consists of a genus, and that genus of a single species, *Homo sapiens*, Man the wise. Without disputing the universal fitness of the epithet 'wise,' one may reflect complacently that poor relatives

are very troublesome, and that it is well for our nearest, the gorilla, to be kept in his place. Some consolation also may be derived from a sentence in Mr. Beddard's learned contribution to the *Cambridge Natural History*. Speaking of the great throat pouches which enable the gorilla to produce appalling howls, he gives a figure of the human larynx, showing traces which 'remain to testify to a former howling apparatus in the ancestors of man.' Blessed be that saving word 'former,' else what might the House of Commons not become on occasions?

XXI

In the retrospect to which the elderly sportsman turns so often and so fondly, certain figures stand out very clear, guides and ministers to his pleasure — unsparing critics, mayhap, of his performance, but ever ready with hand and head to contribute to his triumphs, sharing with him that special kind of comradeship which, engendered only in the open air, cannot grow to perfection unless under one of three conditions — campaigning, seafaring, or the pursuit of wild animals.

Taking the last of these three — what paramount wisdom and authority we, as boys, attributed to huntsmen, gamekeepers, and gillies, yielding to their precepts the deference due to prophetic utterance. In youth, we emulated their endurance and prowess, accepting without question their dogma upon the nature of beast, bird, and fish; and now that youth is beyond recall, do we not cherish each quaint turn of phrase which comes to mind, and envy the simple, concentrated lives into which

common interest and occupation have given us some insight, obliterating distinction of rank and disparity of income. It is in the field, in the forest, by the river-side, that one realises best that

‘The rank is but the guinea stamp,
The man’s the gowd for a’ that.’

The Dictionary of National Biography fills between sixty and seventy octavo volumes, and never a paragraph in that mighty work has been spared for Tom Purdie. Yet who was uppermost in Sir Walter Scott’s thoughts when the flood of his troubles burst upon him in the dark winter of 1825?

‘A bitter thought,’ he jotted in his diary, ‘but if tears start at it, let them flow. My heart clings to the place I have created. There is scarce a tree on it that does not owe its being to me. . . . Poor Will Laidlaw—poor Tom Purdie—such news will wring your hearts, and many a poor fellow besides to whom my prosperity was daily bread.’

And then, four years later, when Tom’s honest heart had ceased to beat, ‘I have lost my faithful servant—my factotum—and am so much shocked that I really wish to be quit of the country and safe in town.’

Few writers ever have equalled, none has excelled, William Scrope in describing field sports. He had the discretion to publish but twice—*The Art of Deerstalking* and *Days and Nights of Salmon Fishing*—but these are books in a thousand, books which, like Alexandre Dumas’ novels, one may read again and again with undiminished zest. Yet if you analyse their charm, you will find that it would vanish if the sayings and doings of stalkers and

gillies were suppressed. Scrope was one of the few Englishmen—I had almost said the *only* Englishman—who could repeat conversation in northern dialect without making it ridiculous. His most sparkling pages are those which give the *ipsissima verba* of the hill men, Peter Fraser, Sandy Mackintosh, and the rest, and of the men of the river, Charlie and Tom Purdie, and Wattie of Melrose.

Gray, indeed, and monotonous would be the angling annals of storied Tweedside but for the memories of the Purdies, the Kersses, Rob o' the Trows, and others, their successors, whom we, later-born, have known. One has chafed under their tyranny, resented their dogma, smiled at their foibles, yet withal how empty the scene would be were they absent, how void and vapid the sport without their eager comment.

And so to-day, instead of recounting any of my own feats or failures by flood or fell, I am going to dive into the past and recover some recollections of a few of the good fellows who have worked so hard to provide me with sport.

The first dive shall be a deep one, into the far-off days of boyhood, when my very first preceptor in the rudiments of shooting and angling was John Pace. Of all the characters with which I have become intimate in any rank of life, John's was one of the cleanest and most sincere. Of English parentage—his father was a Staffordshire gamekeeper—John served all his life in the north, and became more Scottish than any Scot. His first place as underkeeper was at Blantyre, whence he was promoted to Sir Michael Shaw Stewart's fine territory of Ardgowan. This was in the 'thirties, a period when driving grouse or

walking them up in line had not been dreamt of; every bird was killed over dogs, and both setters and pointers had been brought to such perfection of breeding and training as very few sportsmen in these days have any experience of. The remarkable influence over dogs which John was found to possess, and the excellence to which he carried their performance on the moors of Greenock and Duchal, soon brought him into notice; so when my father, who had married a daughter of the house of Ardgowan, applied to Sir Michael about 1836 to recommend him a head gamekeeper, he was told that he could not do better than take John Pace, although he was at that time only three or four and twenty. Never was there a more propitious engagement. It was the beginning of sixty years of such single-minded service as it is not often the fortune of an employer to receive, and of such perfect mutual confidence and affection as only such service can secure.

John Pace's dogs were a joy to behold. He began with Gordon setters, beautiful glossy creatures with black silken coats faced with rich tan—a peculiar coloration arising, some say, from a cross with the bloodhound, according to others betokening a dash of dark collie. The race originated in the Duke of Gordon's kennel towards the close of the eighteenth century. There exists in the United States, where setters and pointers still hold the field against modern methods, a Gordon Setter Club; but I gather from Mr. Joseph A. Graham's treatise on *The Sporting Dog* that the strain has forfeited its ancient fame.

‘In looks,’ says he, ‘this breed is one of the handsomest, and some fanciers are still loyal to its good qualities; but the

Gordons have been even less successful than the Irish in retaining the affections of the multitude of shooting men. The reason usually given by sportsmen who have tried and discarded them, is that they are self-willed and hard to handle, without having class, which would be a compensation for extra trouble in education.'

The more's the pity, for nobler and more docile animals I have never seen than Pace's Gordons. He used to work three brace of them simultaneously, as easily as a single dog; but there is no doubt that they took a lot of training, and John's discipline was rhadamanthine. Hares abounded in the country in those days; to break young dogs from fur he resorted to the severe automatic punishment of the puzzle-peg. This was a stout piece of ash, shaped at one end to fit under the dog's lower jaw, to which it was attached by a loop of cord passing under the tongue. The other end was narrowed to a stout, cylindrical peg, projecting five or six inches beyond the dog's muzzle. Having fitted a brace of young setters with this equipment, John would loose them off on a stretch of heather, where a hare was certain to be started before long. Away went the young ones in hot pursuit; no check nor warning occurred so long as they ran, heads up, sterns down, in view; but once let them put their noses down to run by scent—the peg stuck into the ground, the dog received a violent wrench of the lower jaw, and was thrown head over heels. It required but three or four repetitions of this experience to cure the highest-couraged Gordon of the faintest inclination to look at hares again.

As for setting game, the Gordons did that naturally. They were encouraged to range wide, and took such

advantage of the liberty as to fill the minds of south country sportsmen, accustomed to pottering pointers, with dismay. But so staunch were these dogs that, when two of them were setting game at widely separated places on the hill, John would take the guns to the nearest, very deliberately pick up any game that might be shot, and then proceed to attend to the other point. Very seldom was his confidence misplaced; which was well for spectators with tender hearts, for the towelling administered to a dog that forgot its duty was not pleasant to behold.

By the time I had become fairly proficient with a single-barrelled muzzle-loader, being then a lad of ten or eleven, my father had let most of his grouse-ground, and the Gordon setters had been supplanted by a kennel of pointers. These were found more suitable for partridge shooting; not because the Gordons were less handy and docile, but because the thin-coated dogs suffered less from heat in low and enclosed ground and among deep turnips. They were not heavy-jowled, pottering animals, these pointers; but a swift, rather light, type with a dash of foxhound blood. If the Gordons surprised a stranger by their rapid and wide range on the heather, it fairly took his breath away when John Pace loosed off two, three, or four of these black-and-white or liver-and-white pointers in a September stubble or forty-acre turnip-field. The puzzle-peg had made them perfectly steady from fur; but it seemed impossible that these fleeting, flashing creatures could pick up the scent of a crouching covey in time to save mishap. John's faith in his beauties was well-founded. It was the rarest thing possible that one of them flushed a covey by accident. Much of the agri-

cultural land in Galloway is broken by rocky knowes, rough with grass, whin, and fern; strips and patches of corn stubble or green crop wind in a labyrinthine manner among shreds of the primitive surface, and these surroundings greatly enhanced the charm of a point. A dog might be racing along the crest of one of these knowes, when, presto! he stopped as if smitten by a spell. Not a word from John! just a lifted hand to warn the other dogs which might not have viewed their comrade. Then was seen the charming group of which modern sportsmen can have so little experience: the dog that found the game, holding the point; the others backing to him with eager, anxious countenances, in every variety of statuesque attitude. So perfect was the discipline of these animals that John Pace had not the slightest difficulty, nor, it may be added, remorse, in beckoning up one of the backing dogs to take the point from the legitimate finder, who obediently fell back to the second place. But it would have moved the stoniest heart to mark the pleading in the displaced one's eyes. I have only to close my own eyes to revive a scene enacted full forty years ago. On a wide, sunny hillside, heather-clad and strewn with grey boulders, three brace of shining pointers are ranging swift and far. Not a word of guidance do they require; just a note on the whistle now and then, and a wave of John's hand, to make them cover fresh ground. To and fro they race, crossing each other's orbits, quartering every rood of heather. Suddenly a liver-and-white bitch wavers in her gallop, draws forward a few paces, and stands quivering. All the other five dogs stand or crouch, then creep slowly up in rear of her who has found the game. Such a study of pose in these six high-bred creatures! One after

another they are all given wind of the game, as John silently summons each one to take the point in turn; until finally—up gets a single old grayhen!

In one department of his kennel John was not exemplary—he never had a decent retriever. He considered the professional retriever useful in covert shooting, especially for hares and rabbits, but he never would employ one with his setters or pointers in the field; holding that to allow a dog to dash in and grab up fallen game under the very noses which had first discovered it was too sharp a trial to inflict upon his favourites. He hated, therefore, men who brought their own retrievers with them; for it was his invariable practice, part of his educational system, indeed, to recover dead, and even winged, game with his pointers, and to reward them by allowing them not to mouth it, but to nuzzle it. I have seen a couple of guns go up to a point in a field of high turnips. The birds rose singly, or in twos or threes, and at the end of the fusillade there were seventeen to pick up. Every one was found by, and lifted before, the pointers.

Of course all this took time, which was reckoned but lightly in the leisurely old muzzle-loading days, though it would be voted intolerable now. I am not drawing any invidious comparison between the modern plan of campaign, which marshals an army of beaters with waving flags across a whole countryside and requires nothing of the guns except superior marksmanship, and the older system, under which a couple of sportsmen, accompanied by a head-keeper and two or three assistants, went quietly to work, and so manœuvred as to land at a convenient hour beside a clear spring to munch their frugal provender. I am prepared to admit that what has been lost

in pointers has been gained in retrievers, which are now of a number and excellence unknown of old. But the change was a sore trial to John Pace, who was past middle life when it began. His patience, never very elastic, was sorely tried by the introduction of breech-loaders. From the ingenious mechanism he could not withhold admiration, for he loved a pretty gun; but he used to wax very indignant at the pressure entailed upon his dogs. 'Down charge!' was no unmeaning observance—no mere feature of disciplinary parade; it provided a valuable breathing-time for animals that had been racing at top speed, perhaps under a burning sun among suffocating turnips. Many a time have I marked mute chagrin depicted upon his honest features when young fellows pressed before the dogs at a point, and sent in their retrievers to gather the slain, without a thought for the gallant creatures that had found the game for them. Many a time has he unbosomed to me his indignation afterwards; vainly, I fear, for I was young and keen, and took pride in the performance of my own retriever. Year by year the pressure became greater, as first the fashion of walking in line, then of driving, established themselves more firmly in favour; until at last men voted pointers a bore, and the old order of things passed away for ever.

I recollect a fine old black-and-white pointer called Rake, which proved too much altogether for the nerves of a friend who came to shoot with me. Rake had a queer habit when drawing upon game of looking round and glaring in the face of the shooter with appalling solemnity. 'I wish you would tie that dog up,' exclaimed my friend, after letting fly ineffectually at a covey; 'he

gives me the jumps. I can't hit a barn-door when he looks at me like that.'

The fields of Galloway, with their rough oat stubbles, their dusky breadths of potatoes, their ferny glens and whinny knowes, remain as fine dogging ground as ever, but nobody goes after game now in the old manner. In the year 1869 I had a controversy with a neighbouring laird, who had adopted what was then the new mode of driving birds into turnips to be walked up by the guns. He admitted that it was a pity to see pointers going out of fashion, but maintained that they caused a loss of time, and that even a single gun would shoot far more birds without dogs than with them. Thereupon I backed myself against him for a wager. Each of us was to have but one gun, loaded by himself; my rival was to have his birds driven into turnips and walk them up with as many beaters as he chose. I was to work pointers for myself, recovering every bird with my own retriever. It was a near thing. He beat me in his total bag, for he killed several grouse, and I killed only one; but the match was in partridges, and I beat him in those. I took out three brace of John Pace's pointers, leaving him at home, or the dogs would not have worked for me; and I ended the day with 61 brace of partridges, my rival running me close with $57\frac{1}{2}$ brace. I was tired that night; for the additional labour of stooping to take 122 birds from the retriever was severer than many people might suppose.

Reverting to John Pace as my earliest preceptor in sport, how pure and enduring were his precepts. It must always be a matter of luck or chance through whose hands a boy's tastes and habits shall receive their bent; and no influence is more potent for good or ill than that

of his initiator in woodcraft and field-lore. I have had experience of poisonous practices on the part of more than one professional preceptor of youth, possessed of unexceptionable references; but I cannot recall, in all my constant boyish intercourse with John Pace, a single word or sentiment or act, uttered or done by him, that my mother would have wished me not to hear or see. Many of his sayings and many instances of his example remain undimmed by lapse of years. They may not be worth repeating; but when I see fond parents solicitous to prevent their children associating with servants, and hear them deploring the carelessness of some young mother in allowing her children to do so, I make mental comparison of John Pace's influence upon my character with that of certain pastors and masters to whose care I was intrusted later. There are noble servants, just as there are ignoble masters; and who may reckon the percentage of nobility in either class? I can but testify that so far as the evil in my life may be traced to intercourse with others, it was contracted from social equals and superiors, and in no single instance from inferiors.

To all dealings with his neighbours, high or low, John applied the invariable test—Is it honourable? He had an obstinate stutter, and pronounced the word ‘ho-o-o-on-ourable.’ No *preux chevalier* ever showed more delicate discrimination in the application of that epithet to the most ordinary affairs. For instance, very few gamekeepers, perhaps not many sportsmen, feel any compunction at shooting along the marches as hard as on any other part of the ground. Can we *all* disclaim an inclination to punish the vicinity of our neighbour's land a trifle more severely than fields nearer home? Well,

that was a practice for which John instilled into me a strong repugnance. It was not ho-o-o-onourable, said he, and his tendency was always to give the march a wide berth.

In matters of smaller ethical moment also he had very decided principles. He deemed it unsportsmanlike to shoot peewits or curlews, an observance which it were well if it were better regarded at the present day. Golden plover, of course, were proper game; but he was fastidious in the matter of water-fowl, among which he only reckoned wild geese, mallard, and teal as creditable trophies: pochards, golden-eyes, and tufted ducks, in his opinion, were pretty and useless creatures not to be molested. Perhaps because, winter in, winter out, they were the first things he saw in the morning—for his house stood on the margin of a bay in a lake that has now been a sanctuary for water-fowl for more than seventy years; and into this bay all wild-fowl, except widgeon and teal, most nervous of the duck tribe, are accustomed to resort, to gather the crumbs that fall from the table spread for the swans. As for coots and water-hens, he could not restrain expressing disgust when some over-ardent sportsman floored them. If it was argued that they were far from bad eating, he would reply, despite his English parentage: 'Ay, m-m-maybe thae English'll eat them. Dod! they'll eat onything. They eat *eels*, ye know!' And he would shake his sides with laughter, as though the statement were wellnigh incredible.

John Pace completed fifty years of active service at Monreith before he retired on well-earned full pay. The last ten years of his life were sorely vexed by a disabling and peculiarly painful disease, which he bore with in-

flexible stoicism. *Sunt lacrymæ rerum*—it was mournful to see one, once so stalwart and indefatigable, reduced to a cripple's stroll and chair; but he suffered no complaint to vex his visitors, only saying patiently, with a shake of his good gray head, 'We must just submit.' While life endures, the scent of a velveteen coat will always bring back to me the memory of my earliest lessons in angling, when, encircled by John Pace's guiding arms, I let the baited hook swim down the burn, and pulled out trout of a lustre and iridescence unknown in these latter days.

It is a far cry from gray Galloway to brown Caithness; yet is the distance not so great as to account for the contrast in air, in light, in landscape, in people. It is like passing to a different realm. 'Brown Caithness' I have called it; for although the land breaks into blossom at midsummer,—golden whin, purple bell-heather, bluebells, stitchwort, fragrant moor orchis, and the like,—I know it best before winter has relaxed its grip, when the earliest salmon ascend meandering Thurso. Brown is then the dominant tone in this eerie land, an impression confirmed by the following jotting in my notebook: 'Brown heather, brown peats, brown stone houses; even the roofs—most of them—are of brown flags; though the great whisky distillery of Gerston strikes a noisier key with its covering of purple Welsh slate. The ploughed land is brown too, and the wan pastures nearer pale-brown than green. Through the great plain winds a sullen river, whose waters, though snow-fed, are brown also. Its course is silent, save where, at long intervals, brown barriers of rock oppose and work it into sudden roar of wrath.'

In this brown setting moves a tall, lithe figure clad in

brown homespun, brown-bearded, brown-cheeked, with steady gray eyes—my fishing gillie, Sandy Harper. Sandy was a fine specimen of that excellent blend of races—the Highland Celt and the Norseman,—uniting the charming manners and ready speech of the Gael with the more steadfast qualities of the Scandinavian. Needless to remind the reader that the Norseman kept his grasp upon Caithness and Sutherland long after the rest of the Scottish mainland had passed under the sway of native kings. Not till the very close of the twelfth century were the jarls brought into subjection to the Scottish crown; seven centuries have done little to obliterate racial character,—little save the vernacular has changed since the Commissioners of English Edward halted a night at Halkirk in the autumn of 1290 on their way to receive the ill-starred Maid of Norway as the betrothed of the first Prince of Wales. But though the speech of the people is Saxon, the old Norse names crop up everywhere, designating permanent land features. A brother angler, who had passed the previous summer in Norway, once observed to me what he considered a curious coincidence, that Loch Watten, a sheet of fresh water between Halkirk and Wick, should bear the same name as a lake near his lodge in Norway. Natural enough, quoth I, seeing that *vatn* is the Norse word for water.

Sandy Harper was a crofter, occupying a few wind-swept acres near Scots Calder; but the most important part of his vocation was that of gillie to salmon-fishers and grouse-shooters. The croft can have done little but keep him and his family in meal and milk, bacon and potatoes. He was a splendid specimen of his kind, over

six feet high, well knit, with handsome features and a truly commanding presence—a very lord among other gillies. To see him emerge from his low-browed, smoke-stained hovel, such as any sanitary authority in the south would have condemned as unfit for habitation, gave rise to sundry reflections upon the vanity of building regulations.

Corresponding to Sandy's physical development was his mental equipment. Politics and natural history were his favourite subjects: one could discuss them as freely with him as with an equal, though he had seldom been out of his native wilds, and then only on brief visits to some of the sportsmen who employed him on the river or moor. What struck me as most unusual in one of such restricted experience was the absence of prejudice and of that intellectual rigidity which binds a man invincibly to acquired or preconceived opinion. In talking politics, for instance, he was not so eager to air his own views as to learn the opinions of others upon subjects in which he could hardly have been expected to take much interest. 'I was bred a Liberal,' he said to me one day, 'and in many things I'm a Liberal yet; but what converted me to the Conservatives was Lord Salisbury's foreign policy.'

I first made Sandy's acquaintance many years ago. He was waiting, when I arrived from the far south, at Halkirk station on a bitter February noon to conduct me to my beat on the Thurso. I was a stranger in those parts, prepared neither with clothing nor by anticipation for the rigours of a Caithness winter. I gazed shivering across the wild, bleak plain, where not a tree, not even a bush, presented itself as shelter from the

violent, piercing north wind and stinging snow-squalls. Salmon-fishing, quotha! As well go butterfly-hunting under such a cruel sky. But Sandy knew better, and seemed to make light of the weather, as nothing out of the common. I thought I knew something about salmon-fishing; but before the close of that day I was to get an inkling about how much remained for me to learn in that craft.

We climbed into a waggonette and drove some dreary miles to Westerdale Bridge, at the top of my beat, where, under the lee of a mill, we fixed up the rod, and at Sandy's request I produced the largest and brightest flies in my box. Enormous as they seemed to me, they did not satisfy him. 'A salmon will not move in the cold water,' he explained, 'at anything less than four inches long.' So we adjourned to a little store at the bridge kept by a quaint old Highlander called Rory Ross, an adept at 'busking' flies. Sandy selected half a dozen flaming concoctions of fur and feather, one of which, esteemed a great killer in cold weather, rejoiced in the exhilarating name of 'Hell-fire,' and we returned to the river. 'Hell-fire' was of a size and complexion that could not pass unseen over any fish that might be in the stream; and, seeing it, two or three kelts sampled its quality. Next, where the river swirls deep and dark under the steep clay bank of the 'Lairdies', a fish dashed at the fly and missed it.

'A clean fish,' declared Sandy, and caused me to exchange Hell-fire for something a trifle slimmer and with some blue to temper the blaze. This time the salmon made sure of it, and five minutes later my first Thurso fish was quivering on Sandy's gaff.

So ended my opening day with Sandy Harper—the

first of a long succession in that and following years. Against most gillies one has to record the loss of a fish now and then, but Sandy's hand and eye were unerring. I cannot recall a single instance of his bungling a chance with the gaff.

Skilful and attentive as Sandy was in the capacity of gillie, his value as a companion was greatly enhanced by his conversation, his sense of humour, and his knowledge of local lore. I once asked him whether he had known Robert Dick, the Thurso baker, botanist, and naturalist, whose fine collection of old red sandstone fossils is preserved in the Geological Museum, Jermyn Street, and of whom the late Dr. Smiles wrote such an excellent and sympathetic biography.

'Oh, I mind Robert fine,' said Sandy. 'Well do I mind him: a good man, but a bad baker. He just ruined himself with his fancies, letting the bread spoil in the baking while he was ta'en up wi' some auld-warl' doctrine. There was a neighbour passed him one day howking and hammering in Gerston Quarry yonder. "A fine day, Robert," he cried. "What are ye seeking there?" "Fish," quo' Robert, and went on wi' his work. "Queer kind o' fish in a place like yon," said the other, and away he went down the road to Thurso, telling a' the folk that Robert Dick, the baxter, had gone clean demented, seeking fish wi' a hammer in Gerston Quarry!'

I feel that it is idle to attempt Sandy's portraiture divorced from the environment of that strange land of Caithness, whence winter, the season when I know it best, seems to banish not only all token but all promise of verdure. I shall not forget the last time I saw Sandy beside the river he knew so thoroughly and loved so well.

It was in that rocky gorge, three or four miles below Loch More, where Thurso abandons its habitual sloth, flinging itself about among the rocks and churning out foam in reckless profusion. I had arrived at a sheltered nook under a cliff crowned by the ruined keep of Dirlot, a grim stronghold which, like every relic of the middle ages in this land, has its record of midnight massacre, fire, and rapine. Below the castle the river glides deep and dark between opposing cliffs, forming a fine salmon-cast, known as the Devil's Pool. Sitting down to eat my luncheon, I bade Sandy take my rod and fish the cast. A gleam of wintry sunshine lighted the weird scene, and, as I watched my gillie casting, I thought it would be hard to match such a fine type of manhood. His unconscious pose was so statuesque, his thigh boots set off his lengthy limbs so well, his action with the rod was so graceful, the brown rocks and browner water threw his sunlit figure into such high and delicate relief, that the picture shines out clearer than most others in the dim gallery of the past. I could not help feeling a trifle envious of such a fine animal, so greatly my superior in stature, strength, and good looks.

As he fished, he repeatedly scratched his ear, which, when he came from the water, was bleeding a little. He thought it had been chapped by cold. Ah! little as either of us suspected it, the finger of death was there. When I returned a year later to the Thurso, Sandy Harper was my gillie no more. He was bedridden, smitten with cancer, and when I visited his humble dwelling, those once handsome features were swollen and distorted almost beyond recognition. Only the perfect manners and good breeding of the man were unchanged.

He wasted no time in complaint, and only spoke of his disease in reply to my inquiry, though it moved me almost to tears when he said simply—‘I am sorry, Sir Herbert, when I think I shall never be on the river with you again.’ Then, although the swelling had almost closed his mouth and it was evident that speaking caused him much pain, he began to discuss the prospects of the fishing season as keenly as if it were he, not I, that was concerned in it. When I rose to leave, he asked a question curiously characteristic of his active intelligence—a question which, until the present time, has baffled all scientific research. ‘I want to ask you,’ said he, ‘you that understands these things, is this trouble of mine caused by a bacillus or not?’

There I left him in his lowly box-bed, my comrade in many a wild day’s sport, and thence they carried him, a fortnight later, to lay him beside his people in the lonely moorland cemetery.

What a crowd of minor characters claim recognition as one reviews the past. There was old Tofts, head-keeper to the Earl of Galloway, presiding over the home beats of his master’s princely domain. In physique, his only peculiarity was that his complexion seemed to be of parchment: come foul or fair, or rain or shine, it never lost its whitey-brown tint. Many a pretty day’s sport have I had with him along the well-clad shores of Wigtown Bay, reminding one of the meeting of Mount Edgecumbe woods with the waters of Plymouth Sound. Tofts’s reputation, luckily, did not rest upon the quality of his dogs, which was indifferent; but he had a quaint, confidential way with them, which was sometimes amusing. Somebody having fired at a hare and imagined it

wounded, called out for a dog. Tofts let go a gaunt, rusty-coated animal which disappeared on the trail and was seen no more for a while. We sat down to luncheon, and were half finished before the animal reappeared, without the hare. On being asked whether he thought the dog had caught the hare and left it, Tofts bent down, seized his dog's muzzle, and smelt it. 'No,' said he, 'I think he has not been in *contact* with it.'

Then there was Alec Boyle—a robust, rather short, swarthy fellow, with a merry eye, a great crony of mine in my school holidays, possessed of the only good retriever in the establishment presided over by John Pace. It was a creature of patchwork pedigree, fearfully and wonderfully made, brindled in unearthly fashion with drab and black, but of intelligence almost human. Alec's chief failing was of a convivial nature, which once afforded a parliamentary candidate a fine opportunity for a platform joke. The occasion was an election meeting in a moorland schoolhouse; to describe the night as inclement would be to pay it an undeserved compliment. The wind raved and the rain poured; finding a weak place in the roof, a drip descended on Alec's curly black head. He shifted his place several times, till the candidate, interrupting his dissertation, observed—'That is the first time I have ever seen Mr. Boyle decline *a drop!*' a topical allusion which found instant appreciation among the audience.

Tom Hogg was another well-remembered worthy, now passed to his rest. A native of Ettrick, I believe, where others of his surname have left their mark, he is connected with some of my earliest and brightest recollections of shooting, for he had charge of some of the late

Earl of Stair's fine moors on the Water of Luce. I shall be accused of prejudice, no doubt, if I express regret that such days as I have spent with Tom Hogg and his fine pointers may never be had again — if I state my conviction that no luncheon, however elaborate, can ever be so savoury as the pocketful of provender which each man bundled up for himself at breakfast. For that was the rule of old in that most liberal establishment. No general luncheon was provided; paper and string were laid on the side table. Experienced guests had learnt the prudence of making their provision *before* eating a hearty breakfast; postprandial appetite being an unsafe test of what might prove to be their requirements after noon.

It was under Tom Hogg's auspices that I first experienced the excitement of grouse-driving. It was a novelty in Scotland in those days: no regular butts were provided for the shooters, who concealed themselves as best they might in peat hags, behind a convenient stone dyke, or by simply crouching in the heather. In such circumstances not only was the practice rather ineffective and uncertain, but there was considerable risk of accident owing to the imperfect 'dressing' of the line of guns, their concealment from each other, and because we had not learnt the obligation to take birds only coming or going, and not to follow them round. The concern of a certain moment is still present to me, when, having fired at some birds crossing to the left, I heard a loud shout from an invisible neighbour — 'Hi, hi, there! Take care what you're doing. You've shot me!' Concern deepened into horror when, at the end of the drive, I found the said neighbour bleeding profusely, a white silk neckerchief

and the whole front of a light-coloured jacket being deluged with gore, presenting a truly ghastly spectacle. He was a well-nourished gentleman of florid complexion, and it was a mighty relief to find that the whole of the mess came from the puncture of a single shot in his rosy cheek. Thank God it was not his eye, as it might have been; in which case I should not be recounting the incident with so much levity.

Tom Hogg was a typical south-country Scot, quietly observant and ready with dry comment. His vocabulary was occasionally ambiguous; as when he invited me one day to subscribe to an Aperient Society. Now, like every other M.P., I was inured to solicitation on behalf of every form of recreation and many kinds of enterprise; but the aim and organisation of an Aperient Society baffled all conjecture. 'That's surely a funny kind of society, Tom,' said I; 'how does it work?' 'Oh, it's just a club o' bee-keepers,' he replied; 'we're great at the honey hereaway, ye ken.' I was enlightened at once, and willingly contributed my mite to the *Apiarian* Society.

Forty years ago, broad Scotland contained no more hospitable roof-tree than that of Dunragit—no more charming host than the gallant admiral who was laird thereof. Visitors often came without notice, but never without a genuine welcome, sure of a full share of all that field or flood could provide. By ancient and picturesque tenure the whole right of salmon-fishing in the Water of Luce and its tributaries was vested in the lairds of Dunragit,¹ from source to mouth, and beyond the

¹ Strictly speaking, I believe, in the lairds of Park, who were Commandators of Glenluce Abbey; but the families and estates of Park and Dunragit coalesced.

mouth so far as a man might cast a javelin, riding into the sea at low tide. Those who can recall old times at Dunragit will not have forgotten the two Sandies—Sandy Weir and Sandy Clenachan, gamekeepers. I had most to do with the latter, whose somewhat sinister aspect belied his excellent qualities. He had a peculiarity of vision, causing him to lower his face and look out and forward from under a pair of swarthy brows. But his eye was true enough: he was unerring in the use of the gaff. On one occasion his dexterity saved me a long tussle with a heavy fish, foul-hooked. It was on a bright October day, with the water far on the low side; few places afforded any chance of a fish, and most of these had been tried before noon by various anglers. I had seen nothing all morning, and was about to give it up as hopeless, when it occurred to Sandy that there was a streamy bit of water partly screened from the sun by the Red Brae of Park. Thither we sped, across the green holm; but scarcely had we got within view of the place when I caught sight of the glint of a rod. The cast was occupied, and, in the prevailing conditions of weather and water, there was little hope for any except the first fly over any fish that might be in the pool. The only alternative was to go home, and the keener the angler the more reluctant he is to take that course. Some pleasure may be extracted from the mere act of putting a fly artistically over a pretty bit of water; so I sat down on the sunny side of a dyke, and waited till the other man had left the water. When I took my turn, matters seemed less hopeful than we had anticipated. The sun wanted an hour more westering before the shadow of the Red Brae should fall across the stream.

There was just a narrow strip of dark water under the cliff on the opposite bank; upon the rest of the current the rays beat pitilessly, turning the water to golden brown and revealing the stones on the bottom. It was well, methought, that dinner did not depend upon what I might get out of *this* place!

The result is responsible for many hours in later years spent in fruitless perseverance under adverse auspices. The little silver-bodied, double-hooked fly had not taken half a dozen voyages across the stream when there was a splashing rise, the line tightened with a snap, and I was racing down the shingle after a fish which seemed to be mad. It never rested a moment; the connection between us had not endured more than two or three minutes when the creature chose to rush into the shallows at my feet. The rod straightened—the line fell slack—off! I thought. But no: before the fish could regain the main current, Sandy dashed into the water, made a firm stroke with the gaff, and returned ashore dragging a 22-lb. salmon, clean from the sea, with the tide-lice on it. The hook was fast in the anal fin, and every fisherman will understand how little control one has over a salmon hooked in that region.

Sandy was not always communicative; but when the spirit moved him, his narrative was graphic. I remarked to him one day that it was curious that the Luce, which looked like an ideal trout stream, should produce nothing but fingerlings.

‘Ay, but there’s big troots in the water,’ said he, ‘if a body had the skeel o’ catchin’ them.’

‘What makes you think that, Sandy?’

‘Oh, I’m no’ thinkin’; I ken it fine.’ Then, after a

pause, 'Ae day a gentleman from Manchester was fishin' troots about the Loups o' Kilfeather, and he heukit a big yin. Awa' it went doon the water wi' him, maybe twa mile, till he cam' doon to the Bloody Wiel—that's where the railway bridge is, ye ken. I cam' up wi' him there, and I seen the fish. Peace! but that was a material troot.'

'Did he get him out?' I asked.

'No' him!' was the reply. 'He was that spent, the body, wi' rinnin', that he could barely pit the ae fut before the tither. Sae when the troot begoud to steer again, and was for aff doon the water, he jist stood like a parlectick; and the troot smashed a' and awa'. We saw nae mair o' him but the wauf o' a great tail as he gaed roond the rocks that's there.'

'How big was he, Sandy?'

'Dod, I ken na hoo big he'd be; but this I ken finely—he was the biggest yellah troot that ever I seen.'

'Are you sure it wasn't a red salmon?'

'Oh, salmon! Na, it wasna a salmon. A salmon never had spots on him the same as I seen on the side o' yon troot. They were as big as thae brammle leaves'—pointing to some blackberry bushes by the wayside.

Another time we were discussing the undesirable presence of pike in some lochs, and their providential absence from others. Sandy spoke of pike in a certain loch which I was not aware contained them.

'But,' said I, 'there are no pike in Loch Maberry, are there?'

'Deed is there!' answered Sandy; and then, after one of his characteristic pauses, added, 'Ae day I was gangin' along the side o' yon loch, an' I seen a thing in the

water, I thoct it was a tree.' Another pause. 'An' then I saw twa e'en in it.'

'And what was it, Sandy?' I asked breathlessly.

'Oh, it was a pike,' he replied laconically.

'And what did you do, Sandy?' I persisted impatiently.

'I gaed back frae the loch for fear o' him!'

By this time Sandy had entered my own service as underkeeper, and I had become aware of an interesting fact about his name. He stood on the pay-sheet as Alexander M'Lean, but, although Gaelic has not been spoken in Galloway for nearly four centuries, he was known to all men in ordinary life by the name of Sandy Clenachan, the familiar rendering of his patronymic being a survival of ancient Celtic usage.

Such are a few of the phantoms moving across the camera obscura of memory. Prosiness is the sin that doth so easily beset old sportsmen, and I am conscious of having committed it; but perhaps it may be reckoned more venial when the motive is to pay kindly tribute to some of those who have contributed so much to bygone pleasures.

April

XXII

As I have occasionally expressed mild remonstrance against the monotony of our shrublands, owing to the want of discrimination shown by many people in decorating their grounds, let me draw attention to a North American shrub which was introduced to this country just eighty years ago, and has made itself thoroughly at home in those places where a fair chance of reproduction has been given to it. I mean the flowering currant (*Ribes sanguineus*), which will be aglow with blossom in mild districts almost as soon as the daffodils. It is as hardy as its cousin, the currant of our gardens, and revels in the moist atmosphere of the west coast. I have just returned from a stroll through a hollow wood, where scores of seedling *Ribes* have sprung up from a few bushes planted as rarities half a century ago. They have spread themselves, here singly, there in thickets, over three or four acres of ground, and it would be difficult to design a more charming decoration than this haphazard display. The standard type of blossom is of lively rose, but the seedlings come of many shades, varying from deep carmine to flesh colour and creamy white. Many of our finest flowering plants—the common hawthorn, for instance—only display their full beauty in alternate years, requiring a season of repose to revive

after the exhaustion caused by profuse blossom. But the *Ribes* never fails; year after year it covers itself with fragrant, blushing wreaths in spring, to be followed by steel-blue berries, which are much in request by pheasants. Less well known than the red *Ribes* is the golden *Ribes* or buffalo currant (*Ribes aureus*). Its virtue consists not so much in its flowers—which, though individually pretty (yellow, margined with red), are not so conspicuous as those of the other species—as in its foliage, which, turning to clear pale gold in autumn, lightens the woods long after most other leaves have fallen. A delectable hybrid, known as *R. Gordonianus*, has arisen between *aureus* and *sanguineus*, well worthy of cultivation. Lastly there is the fuchsia-flowered currant (*Ribes speciosus*), not often enough seen in British gardens, very prickly, and producing its bright crimson flowers, resembling fuchsia blossoms, in May. I have found this species very liable to be stripped by caterpillars of the currant moth (*Abraxas grossulariata*), which, being gregarious, make a clean sweep of any bush which the parent moth selects as a nursery for her brood. This beautiful but destructive insect is remarkable among *Lepidoptera* from the caterpillar, chrysalis, and perfect insect being similar in coloration to each other. Most moths and butterflies are very different in hue from their caterpillars; but *Abraxas* sports its gay livery of black, yellow, and white in all stages of its existence.

Cuckoos are particularly fond of this caterpillar, and are sometimes attracted into the garden in considerable numbers in pursuit of them. My sister reported having counted fourteen one day in her Renfrewshire garden.

XXIII

Lord Avebury, better known as Sir John Lubbock, is one of the best of eye-openers. Take up the volume which he has recently published—*Notes on the Life History of British Flowering Plants*—see what he has to say about the commonest weed, and it is ten to one he will add something to your store of knowledge—that kind of knowledge which makes dulness out of the question in the country. For instance, turn to what he has to say about the common stinging nettle: you will find a figure representing a vertical section through part of a leaf of that plant, magnified thirty-five times, showing two of the stinging hairs, each seated on its cushion of delicate tissue, which, when tightly pressed, distils the acid fluid, causing irritation to follow upon the minute wound inflicted by the hair. Each of these hairs is capped with a rounded head. How, then, does it penetrate the human epidermis? It cannot do so until the head is broken off, which, as it is set at an angle to the stem upon a thin neck of silicified or flinty tissue, is done by the slightest touch. When the head falls off, the sharp points of the fracture cause the wound. This much one may learn from any work on structural botany, but here is a piece of practical observation from Lord Avebury's store which could not be explained without a clear knowledge of the mechanism of the plant. All the stinging hairs point upwards and forwards. Touch a leaf from above or from in front and you must be stung; but you may safely take it from below and behind, for then you simply compress the hairs against the leaf or stem. Protective these hairs or needles doubtless are, but I greatly

doubt whether, as Lord Avebury suggests, they afford any immunity from the attacks of insects, because some of our brightest butterflies—the Red Admiral, the Peacock, the small Tortoiseshell, and the Comma—lay their eggs upon stinging nettles, which are the regular food of their caterpillars.

XXIV

In the old days, before railways had invaded the ancient principality of Galloway, our farmers relied principally upon Liverpool and Manchester as markets for beef and mutton. ‘There’s an enormous stomach behind Manchester,’ was a favourite saying of my father’s old factor; and it came to my mind on a summer day in 1905 when I was watching a van being unloaded of a number of flat cases in the city of London. ‘An enormous stomach in London,’ methought, for these cases contained a consignment of live quails to a large purveyor in the city. I was not aware at that time of what has become manifest since—namely, that 1905 was to be noted as ‘a quail year’ in the British Islands. From almost every part of the country the occurrence of quails was reported, the most singular instance being from that queer little place Fair Isle, midway between Orkney and Shetland. My friend, Mr. Eagle Clarke, a well-known and experienced naturalist, spent several weeks there in summer. A clutch of eggs was brought to him, stated to be those of the landrail; but he recognised them at once as those of the quail. How could the parent birds hit upon that minute and remote spot in the North Sea, only three miles by two in extent, and twenty-nine miles from Sumburgh Head?

Concerning
Quails and
Landrails

Although no birds are more inveterately migratory than quails, only occasionally, at long intervals of years, an influx of them takes place into the British Isles; and the birds remain, not only to breed, but to winter there. It is as though they had been carried out of their reckoning, and, finding food abundant and climate endurable, if not quite ideal, had made the best of circumstances, and settled as colonists. It is on record that about the year 1838 large flights of quails arrived in Britain, and for five-and-twenty years after that nested regularly, but in steadily decreasing numbers. When I was a lad, two or three brace of quails were quite a common complement to a bag of partridges in the south-west of Scotland; indeed, I have seen a separate column for quails printed in a game book. But the last quail I shot was about the year 1869 or 1870, since which it has been exceedingly rare to hear of one until the present season.

Great is the mystery of the little quail. The main route of migration continues the same as it must have been before the Mediterranean was. Quails treat that chasm, measuring a cool million of square miles in extent and some five hundred miles in breadth, as a mere incident of travel, just as people going on an omnibus to the City may give fleeting notice to the place where Temple Bar once stood. Yet their short, round wings seem of the worst possible design for sustained flight. The sportsman knows the quail, in this country at least, as a bird reluctant to rise, which, when flushed, buzzes off with a flurry to no great distance. It is certain that a considerable percentage of the flocks are lost at sea, but that is as nothing compared to the enormous numbers that are netted for the markets of every great city in Europe.

They are taken at two seasons—in March and April, when they arrive at the Mediterranean on their northern passage; and again in September, when passing, with their young, to winter quarters. They are placed in long, low, narrow cages, darkened to prevent fighting among the prisoners, which are packed so close that they can scarcely move. The rate of mortality among the captives is very low, which is the more remarkable because a very small percentage of song-birds survive capture and transit. On arriving at their destination, the quails, still closely confined, are fed with hemp and millet to the requisite degree of obesity for the table of Dives. Personally, I think indifferently of the flesh as a delicacy, and can sympathise with the children of Israel, who murmured at having to eat quail three times a day; for, be it noted, the lean quails of the desert were very different to the succulent titbits we are accustomed to meet with at feasts, and the Israelites were not permitted to make them more toothsome by rolling them in slices of fat bacon, as modern cooks have learnt to do.

The triple note of the male bird has earned for the quail many quaint names in various languages. Among the southern English it is known as 'Wet-my-lips'; Germans call it *Buck den rüch* ('Bend your back'); and in Heligoland the call is imitated by the phrase *Flick de büx* ('Mend your breeches').

Not inferior in mystery to the migratory powers of quail are those of the landrail or corncrake. Like the quail, its winter quarters are in Africa; but its summer range is far wider, covering nearly the whole of Europe, reaching far north in Central Asia, and even extending occasionally to such remote limits as Greenland and

Australia. A wanderer on the face of the earth, yet how poorly equipped for wandering, as must occur to everybody who is accustomed to see it drop, apparently exhausted, by the effort of crossing a September stubble on wavering wings. One peculiarity about its movements was noted by Herr Gätke during his fifty years' observation in Heligoland—namely, that unlike its near relative, the water-rail, the landrail never crosses the sea except in fine, calm weather. Other migrants may ride the whirlwind, if they cannot direct the storm; but the landrail will not avail itself of a favouring gale when changing its quarters. Hence it sometimes happens that this bird, usually seen solitary, may be met with in autumn in considerable numbers, collected to wait for fair weather. Dorsetshire seems to be a favourite waiting-place, for on the southern slope of Nine Barrow Down in that county, on 11th September last, Mr. H. Lyon and Mr. Cavendish Bentinck killed the record bag of fifty-seven landrails. Here it was also that in 1850 Mr. Farrer, Mr. C. W. Digby, and Mr. Luckham killed fifty landrails in a single day. Again, at Acrys Park, near Folkestone, two hundred and eleven landrails were killed during the season of 1880, thirty-five falling to the guns in one day. I confess I like ill to hear of such slaughter. To use a slang expression, the bird offers a most 'footy' shot: it is like shooting at a great moth; and it seems rather unfair to take advantage of birds, bred in other districts, collected for what is truly a most gallant enterprise. We all love the landrail. There is no sound which more surely heralds the coming of summer than its monotonous, persistent 'crake-crake' in the meadows, and there is no spring migrant that appears more regularly and punctually on our shores,

none that removes itself more completely in the shortening days. It is a good bird on the table; but we can afford to take lenient toll of such desirable visitors.

XXV

I forget what French writer it was who declared that his dog could do everything except speak, and **Bird** thanked Heaven that the gift of speech had **Language** been withheld from his faithful companion, because he knew how terribly the animal would bore him by repeating the same thing over and over again. This saying came to mind not long ago in the solitude of a Highland strath, where I was diligently flogging a salmon pool. A thrush, newly arrived from southerly winter quarters, sat on the topmost spray of a birch, singing vociferously. Its voice was charged with meaning, had one only the key to interpret it withal. Like the unknown tongues of the prophets, it bore a message to those who had ears to hear. Perhaps it is well for us that our ears are so constructed that we understand only the general meaning of bird-voices—call-notes, alarm, love-making, and so forth. Infallibly we should be bored by iteration of the same sentiment, especially at this season of universal courtship.

Nevertheless, so invincible is our curiosity, that even serious ornithologists have spent much time in trying to elucidate the meaning of bird-song, and have attempted, all rather clumsily, to render the song of the thrush in human vocables. MacGillivray's endeavour was very elaborate—

‘Dear, dear, dear,
In the rocky glen,
Far away, far away, far away
The haunts of men ;

There shall we dwell in love
 With the lark and the dove,
 Cuckoo and cornrail,
 Feast on the bearded snail,
 Worm and gilded fly ;
 Drink of the crystal rill
 Winding adown the hill
 Never to dry.
 With glee, with glee, with glee,
 Cheer up, cheer up, cheer up here !
 Nothing to harm us, then sing merrily,
 Sing to the loved one whose nest is near.
 Qui, qui, queen quip :
 Tiurru, tiurru, chipiwi :
 Tootee, tootee, chin-choo :
 Chirri, chirri, chooe :
 Quin, qui, qui.'

It happened lately that, while I was at leisurely work in a woodland, there kept running in my head a nonsense rhyme which is, or used to be, sung by children in Bowden parish, Roxburghshire.

'Tillieloot, tillieloot, tillieloot o' Bowden !
 Oor cat's kittled in Archie's wig,
 Three o' them naked and ane o' them clad.
 Tillieloot, tillieloot, tillieloot o' Bowden !'

Vainly I tried to dismiss the tiresome jingle, when suddenly a thrush struck up the very echo of it. 'Tillieloot, tillieloot!' the words fitted the music exactly. Could this ancient rhyme have been an attempt to translate the bird's immemorial melody? Perhaps: but Heaven help anybody who gets the strain in his head as I have done.

Bechstein, who knew more about cage-birds than about their free kindred, devised a system of recording their song, which, applied by Mr. Witchell to the strain of a nightingale, produced the following uncouth result—

'*Quee, quee, quee . . . tsorr tsorr . . . peeuu peeuu . . . tso, rrrrrr he. Rrrrrrrr se. Whit rrrrrr. Tsu tsu tsu . . . chissick tewy. Pee pee . . . ke. Tewy highlo highlo . . . klo klo klo, etc.*'

Ingenious, perhaps, but the result is ridiculous. Aristophanes was saved by his sense of humour from introducing the like into his *Birds*. The utmost he allows himself is to represent the public by 'Popopopopopoi!' and the twitter by 'Titititititi!' To go further is to become absurd. It is worse, it is misleading; for the voice of every bird, and, for that matter, of every animal except man, consists solely of vowel sounds and gutturals. There are no consonants except gutturals in animal speech: it is absurd to credit a nightingale, which has neither lips nor teeth, with the pronunciation of labials and dentals. Every writer on the subject, even Mr. Witchell, who has given immense pains to the elucidation of bird speech, has disregarded this phenomenon. Mr. Harting justly compares the alarm note of the ring-ousel 'to the noise made by striking two stones together'; but he is wrong in rendering that of the fieldfare as *tcha-cha-cha*. A rook does not say *caw*; a sheep does not say *baa*; a cow does not say *moo*, nor a dog *bow-wow*. Listen to them! I defy you to detect the sound of the conventional consonant which we have introduced to express what really defies expression in literary characters.

Many birds hiss if disturbed when sitting on their nests. The gander and the male mute-swan (the cob, as he is technically called) hiss to warn intruders away from their sitting mates or young brood. And the ruse is very successful; even the little blue tit often succeeds in causing the hurried withdrawal of the prying hand, for hissing is closely associated, in the human intelligence,

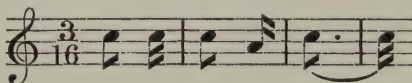
probably in great measure by heredity, with the presence of a venomous reptile. But the hiss of a bird is not the same as that of the 'gods' in a theatre. The human hiss is a sibilant, produced by the expulsion of air between the tip of the tongue and the upper incisors; the hiss of a bird is a sharp guttural, as may be seen by watching a gander, which produces the sound with his bill pretty wide open.

Mr. Witchell, in his *Evolution of Bird Song*, succeeded better in reducing the calls and songs of birds to musical notation than in rendering them in literary characters. He gives long scores of music of the blackbird, thrush, skylark, and other songsters. His page on the barndoor cock is an amusing one—

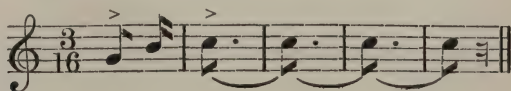
In September 1890 I heard a cock utter an unusual crow :



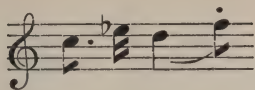
In the following September, at a different place, I heard another uttering this cheerful strain :



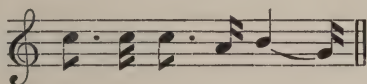
In the city of Vancouver a rooster uttered his clear, long crow in three notes, as follows :



At Sidecup, in November 1895, a fowl habitually drawled the following :



A cock-crow is usually of this character :



Mr. Witchell lays much stress on the imitative character of the song of many birds. Who can doubt it after listening to the varied repertory of the starling as he sits on the housetop in winter, running over all the silenced summer voices—the cawing of rooks in the ashtops, the clucking of coots in the reedy mere, the melancholy pipe of the golden plover, the tremulous wail of the curlew, all intermingled with snatches of sweeter melodies ?

Last summer one of the underkeepers who reared my young pheasants used to summon them with a very peculiar, not unmusical, whistle, such as I never heard before. A blackbird, whose mate nested near the pheasant-hut, picked up this whistle, and mimicked it so closely that it was impossible to distinguish between the calls of the feathered and the unfeathered biped.

But bird-song is not all imitative. ‘It is a wise child that knows its own father,’ but it must be a supernatural cuckoo that can identify its proper sire. And if it did, it could hardly learn from that source the characteristic cry of the race, for the male cuckoo has cracked his voice before his offspring has much chance of hearing it. Still more obscure is the manner in which the vocal powers of

nightingales are transmitted to their progeny; for the male birds have all fallen silent before the eggs are chipped.

Darwin noted as remarkable the fact that song, properly so called, is an accomplishment confined to small birds. The Australian *Menura Alberti*, half the size of a turkey-cock, and the crested screamer (*Chauna chavaria*) are reckoned the only exceptions to this rule—a rule all the more remarkable when the muscular effort required to produce vernal song is considered in proportion to the frame of the songster and the long daily periods during which it is produced. Mr. Witchell had the patience to reckon up the time spent in singing by a thrush in his garden, and found that it amounted to no fewer than sixteen hours out of the twenty-four. The silent intervals, aggregating eight hours, sufficed this bird to seek its food and take its rest.

XXVI

The poets have winged many a shaft to the discomfort, **The March** not only of their own neighbours, but of future **Brown** generations; but now and then they let fly something soothing to the feelings of common men. So now this evening I draw solace from the well-worn lines about 'that last infirmity of noble minds,' for it was ambition that made me stick to salmon fishing all day and return at sundown with an empty pannier; whereas one of lowlier aim, with tackle to match, might have stuffed a sack with lusty trout.

Lord! how they did splash and tumble round the boat as I floated down the reaches of majestic Tay above Dunkeld. They meant business too, these spangled

fellows, albeit a shrill nor'easter swept the pines on rugged Craig-y-barns, and fitful glares of sunshine seemed but to sharpen the fangs of 'blackthorn winter.' They meant business, and transacted it too; for never did I behold such an abundant rise of that most succulent ephemerid, the March Brown, as took place on this 20th April (1905).

They emerged from the water at several intervals during the day, but the chief display was shortly after noon. For fifteen minutes or so the broad river was crowded with them. Drifting in swathes into the slack, hundreds were gobbled up before their new wings were tough enough for flight. Those that escaped the trout rose in the air to be whirled away on the bitter blast—whither? At such brief times one has but to rig up a trout-rod and chuck and chance it among the guzzling crowd, with any colourable imitation of this most popular insect, to pull out as many as he lists—while the rise lasts. When it is over, not a fin stirs on the surface, and one might as hopefully angle for oysters in the ornamental water of St. James's Park.

The odd thing—one odd thing, at least—about the March Brown is the periodicity of the rise. Three or four times to-day, millions of perfect flies were emerging from the nymphs, which is what constitutes 'the rise,' and, by comparing notes with other anglers, I have ascertained that it was simultaneous over several miles of river. Between the different rises there were hours when no fly came to the surface; neither was there a single individual of the previous rises to be seen.

The larvæ of March Browns are flat, and harbour under stones. Not until air collects under their skins, rendering them buoyant and forcing them to the surface to undergo

their critical change, does the trout get any chance at these dainties. *March* Browns the angler calls them appropriately enough, for it is typical March weather—harsh gusts with dry snow—that brings them out in most abundance; but they often appear in crowds early in February. Their big cousins, the Mayflies, must wait to come forth till June sunshine has tempered air and water to their liking.

These hardy little flies, for all their airy build and gossamer wings, must possess a constitution of extraordinary vigour. The organic revolution involved in passing from an aquatic, water-breathing crawler into an air-breathing, active fly, involve structural changes so critical, one would suppose, as to require moderate conditions of weather for their success; yet this seems matter of perfect indifference to them. On a spring day of peculiar inclemency in 1905, when snow covered the land and 'grue' floated thickly on the Helmsdale, the merry March Browns began to take wing and the trout set to work to mar their mirth. The water temperature was taken at the time and proved to be 33 degrees Fahrenheit—one degree above freezing.

Now as to these Tay trout: sure they are the luckiest of their kind, enjoying such privilege as ptarmigan have in a deer forest. Miles upon miles of the banks of Tay are so thickly wooded that a fly cannot be cast from the shore, and those in boats are after nobler quarry than trout. Such bank-anglers as I have seen appear to have but elementary knowledge of the craft, dizzling a worm along the margin in times of flood.

It is curious how different are the table manners of these northern trout from those of their brethren in Hants

or Herts. In southern streams it is the biggest trout that, in feeding, makes the least disturbance. A tiny bell—a scarcely perceptible dimple on the surface—is generally all the signal given by the prince of the pool; but here all is dash and flurry; none of the cautious glare and sip of the English trout, but a desperate gobble and splash, very trying to uncertain nerves and doubtful casting-lines.

May

XXVII

WELL—too well—known to all fly-fishers is the phenomenon of short-rising fish. Whence cometh it? He who could make certain reply would earn a crown of water-weeds, but what reward were meet for him who should devise a remedy? If I cannot prescribe a cure, I may offer a suggestion as to the mechanism of short-rising. First let me cite two typical instances, one of fish taking well, second of their taking short. The first day was on the Helmsdale, 26th February 1900. There had been a heavy flood on the two days previous, breaking up thick ice on the river and carrying it crashing in great floes to the sea. There was a light frost on the morning of the 26th, and before it yielded to the low, feeble sun of Sutherland, I raised, and just touched, three short-rising fish. Suddenly some subtle change occurred; every fish that came to the fly took firm hold, and before the short day darkened into night I had landed eleven spring salmon in eleven consecutive rises, without the intervention of a single kelt.

Now for the other day. It was in May, upon the Thurso, a river draining from the same uplands as the Helmsdale. There had been a good spate, the water was in fine trim, the light and air such as one would choose for a day's salmon-fishing. Soon it was evident that there

were plenty of fish about. They began making most picturesque rises at the fly I offered them, but showed themselves remarkably char about mouthing it. Either there was no sensible touch at all, or a mere momentary twitch on the line; or the line tightened, the greenheart bent—only to resume their normal condition like a flash. It was all the same what fly was exhibited—Jock Scotts, Silver Greys, winged flies or wingless—all met with attention, but of a very cursory description. Two-and-twenty fish I touched that day, holding some of them for a turn or two; others just straightened the line and no more. At evening my total bag was two salmon, and such had been the mood of the fish that I considered myself precious lucky to have scored at all.

How do they do it? It must be a risky game, one should say, to take bent, barbed steel into the mouth and eject it; yet of these fish only five per cent. that came to the fly paid the penalty of curiosity. Well, here is my suggestion for what it is worth. Not mine either; it was contained in a letter published in the *Field* newspaper many years ago by a gentleman who said he had observed closely the behaviour of certain fish in his aquarium. On some days they were eagerly ready for food, and seized it with open mouths and distended gills. When they closed their mouths, the water escaped through the gills and the morsel went down the gullet. On other days they showed but a languid interest in the food offered. They would take it, indeed, with open mouth, but *the gill covers remained closed*; so that the water could only escape through the mouth in a reflux current, which generally carried out the food with it. Herein seems to be the explanation of short-rising. If the gills of a salmon or

trout are open at the moment the fly is seized, it is drawn far into the mouth, and the hook can scarcely be withdrawn without fixing itself. But when the gills remain closed in the act of taking the fly, it is expelled with the water returning through the open mouth; the angler either feels nothing or but a light touch, and the fish goes free.

XXVIII

Writing in the thirteenth century, Thomas the Rhymer
 The Green began his lay of *Sir Tristrem* with the follow-
 Woodpecker ing pretty picture—

‘In a mery mornynge of Maye,
 By Huntly bankkes my selfe allone,
 I herde the jay and the throstyll cokke,
 The mawys menyde hir of hir song,
 The wodewale beryde as a belle,
 That all the wode abowte me ronge.’

Now this Huntly was not the town and district of that name in Aberdeenshire, but Huntly Burn, which, running through the Rhymer’s Glen, forms the southerly march of the estate of Abbotsford, or ‘Clarty Hole,’ as it was called before a mightier wizard than True Thomas gave it a more romantic title. The name Huntly was carried to the north by the Gordons when they migrated from their home on Tweedside. The jay, the throstle or storm thrush, and the mavis or song thrush still make the Rhymer’s Glen to resound; but the woodwail, yaffle, or green woodpecker may be heard no more in that fair land. It is one of those children of the forest which lost its Scottish birthright when the old woodland disappeared under a reckless system of cut-and-come-again; and it is a bird which no effort should be spared to re-establish,

now that there is once more a considerable extent of woodland north of the Tweed. I have failed twice in the attempt; the first time with two fine broods of young yaffles which the late Lord Lilford obtained for me in Hungary. These were delayed for many hours at a German railway station, and perished of starvation. A second lot of six, captured just as they were fit to fly in a Norfolk orchard, arrived safely at their destination; but I was away from home at the time, and those to whose charge they were committed failed to discover the secret of making them eat; so they also died one by one. But I am determined to try again, and to succeed, if possible, before I, too, cross that bourne.¹

The gay plumage of the green woodpecker, like the kingfisher's, strikes a strange note of colour under our grey northern skies. It carries a tropical suggestion; but the bird has more than his verdant jacket, scarlet cap, yellow rump, and chequered tail feathers to commend him to our affection. He is one of the most effective of woodland police, licking up with his prehensile tongue innumerable insects hurtful to forest trees. The pine-beetle, for instance, which works such ravages among coniferous trees, is absolutely beyond check or control of man, multiplying with incredible rapidity under the rotting bark of fallen timber, whence it directs attack in swarms of maggots upon the young growth. The yaffle makes short work of this pest, and small thanks

¹ Since writing these lines I have received discouragement from one whose authority in matters ornithological is worthy of respect. He says that it is hopeless to attempt naturalising the green woodpecker, except in places where the great wood ants abound. We have plenty of yellow and red ants, but the wood ant disappeared with the forest from this south-west corner of Scotland, and has not yet found its way back.

he receives in return. Gamekeepers, prone to the destruction of every living creature that is not game, view green woodpeckers with marked disfavour.

XXIX

In the House of Commons accommodation is provided for visitors of different degrees of distinction who desire to hear debates. There is the Strangers' Gallery for ordinary people; the Distinguished Strangers' Gallery for royalties, ambassadors, and other notabilities; places under the gallery for a select number of members' personal friends; and the Ladies' Gallery behind the Grille. But on Friday afternoon, May 18, 1906, appeared a stranger whose distinction threw that of all others into the shade. Disdaining the places set apart for mere unfeathered bipeds, he took a seat upon one of the pinnacles near the clock tower, greatly to the perturbation of the flocks of pigeons that frequent Palace Yard.

The official designation of this illustrious visitor is *Milvus regalis*, the royal kite; its everyday appellation, the common kite, having become singularly inapplicable, for it is now one of the rarest of British birds of prey. Indeed, a few years ago there was almost as much doubt about the survival of this species in the United Kingdom as there was about the continued presence of the true wild cat; but the interest which has been aroused of late years in the preservation of some of our vanishing birds appears to have been effectual in saving kites from utter extinction. Two or three pairs (increased this year to four, as a friend assures me on the evidence of his own eyes) have continued to nest each year in remote parts

of Wales. Their eggs used to be eagerly sought by collectors; but effectual measures having been taken to prevent that in future, there is good prospect of our witnessing once more that which not one person in ten thousand has ever seen in these islands—the splendid wingmanship of this beautiful bird of prey.

It was a common enough sight once. The Bohemian writer Schaschek, who visited London in 1461, declares that nowhere had he seen so many kites as about London Bridge. A hundred years later another traveller, Belon, describes the kites as almost as numerous in London as in Cairo, and says they fed upon the garbage in the streets. Kites, indeed, were regarded as useful scavengers in times when sanitary science had no disciples. Not a very kingly function to be discharged by a bird distinguished as *regalis*; but thereby hangs another tale. That title was won by the kite on account of its extraordinary powers of flight, which made it the noblest quarry of the falconer. None but the very best falcons could strike at the kite, owing to the great height to which that bird rises when pursued; and as the best falcons were wont to be reserved for the king's mews, the kite became known in France as *milan royal*, which, in Latin version, has become *Milvus regalis* of modern ornithologists.

Humble as he is in regular vocation, and disreputable in morals, being a notorious robber of poultry, the kite is of right royal aspect, measuring more than two feet from the tip of his sharply-hooked beak to the forked ends of his tail. His countenance bears the expression of pitiless ire and ceaseless vigilance which is common to all birds that live by rapine. The head is light gray, almost white,

with dark flecks; the rest of the plumage displays beautiful variations in a brown key, ranging from bright russet to nearly black in the primaries and outer tail-coverts.

To wild game this fine bird bodes little or no mischief, although he who would try to persuade the average gamekeeper of this will find his work cut out for him. The kite prefers carrion and offal to any other diet; hence its habit of frequenting human habitations. But when this falls short, it will rob the poultry yard, and one trembles to think what ravages it would commit among the pheasant coops. The bird that visited Westminster last spring must have seen little to tempt it to resume the ancient haunts of its race. The Thames Conservancy and the County Council have co-operated to make the channel of their river as pure as that of the Tay at Dunkeld. No toothsome rubbish is suffered to litter our streets as in the good old Elizabethan times. So, after resting five minutes or so upon the top of Westminster Palace, the first kite known to have visited London within living memory spread his powerful pinions and scornfully winged his flight in a northerly direction.

XXX

This is the month of eel-fare, when myriads of young
 The Age of Eels eels, of the thickness of a crowquill, 'fare' up
 from the sea into every river and rivulet in the
 land, and make their way into every runnel, ditch, and
 pond of the country. In a former bundle of these irresponsible scraps, I described the advance which had been made of late years in knowledge of the eel's life-history, which had baffled every naturalist, from Aristotle to

Dr. Günther, until Dr. Grassi solved the mystery of their reproduction.¹ But the age to which eels attain, the precise period of their growth at which the generative impulse drives them to the sea, never to return, is still wrapped in obscurity. Desmarest is said to have kept one in the Jardin des Plantes of Paris for thirty-seven years, beginning in 1838. It fed voraciously in summer, but lay inert, without food, during the winter months. It was said to be alive in 1875; but how such a succulent fish escaped a violent death during the privations of the siege of 1871 is not recorded; at least, it is not known to me.

Be their span of life what it may, no vertebrate animal clings so closely to it while it lasts. It is said that in every severe frost numbers of conger eels die in the shallow water of Dover Strait, and are cast up on the beach. But the conger, though so closely resembling the fresh-water eel as to deceive very readily the unpractised eye, belongs to a different genus, that of *Conger*, whereas the fresh-water eel is *Anguilla*. The true eel has scales, the conger has none, and the true eel seems able to bear any reasonable degree of cold, even an unreasonable degree, if the following story be true. It was told to me by the late Peter Cameron, for very many years head-keeper at Blair Drummond. He showed me an open glade in a fir-wood, and said that he was crossing it one frosty spring morning, the ground being white with hoar. A lot of straight sticks lying about attracted his notice; he picked up one and found, to his amazement, it was a large eel, frozen stiff. He collected an armful of these, and flung them down on the kitchen floor before sitting

¹ *Memories of the Months*, Third Series, p. 274.

down to breakfast. Before he had finished his meal, the eels had thawed, and were wriggling all over the floor. Peter was a Highlander, a race which I have not found less voracious than others. His yarn has so much support as may be derived from numerous other stories of frozen eels. Desmarest's eel, aforesaid, was once frozen in its pan in Paris, and survived the experience. What say the physiologists?

The ease with which eels travel for considerable distances over dry, or at least damp land, and their extraordinary tenacity of life after being taken from the water, are well-known characteristics of the animal. Not so well known is the beautiful mechanism which enables this water-breathing creature to endure long exposure to a dry atmosphere. The gill openings are very small slits, protected by a fine membrane stretched over slender arched bones after the manner of an umbrella. Behind each slit is a considerable cavity, at the back of which is situated the gill. Within this cavity enough water is retained to keep the delicate folds of the gills floating; and until this supply of water is exhausted, the eel will not die of suffocation.

It is unlucky for the eel that it has been cast in the form of a serpent, which interferes with its popularity. Unlucky, did I say? Nay, in Scotland this tells greatly to its advantage; for the current prejudice against it as an article of food is the reason why the eel fishery is wholly neglected in that country. Dame Juliana Berners had no good to say of it. 'The Ele,' she wrote, 'is a quaysie Fysshe. A ravenour and devourer of the brode of Fysshe, and the Pike.'

XXXI

Some of the most repulsive forms of life, according to human notions, may be found among the larvæ of aquatic insects, or, to put it more correctly, among the aquatic larvæ of certain terrestrial insects. Magnify one of these creatures and it assumes an aspect more terrifying than the monsters of mythology or the dragons of fairy-tales. Civilised man could with but scant consistency condemn them because they are insatiably carnivorous, gratifying their appetites by incessant violence and slaughter. In the present year, 1904, a bag of 1360 brace of grouse was killed in a single day by nine guns on Mr. Rimington Wilson's moor in Yorkshire. Think of it! Two thousand seven hundred and twenty birds, equal to one bird in every ten seconds for eight hours. Allowing for 25 per cent. of misses (the performers will pardon me if this is putting it too high) it means an average of 377 rounds per gun. Warm work, my masters! Such as makes some of us old fogeys sigh for the days of yore, when one might go out on any day, at any hour, with a brace of steady pointers, content to keep one's legs and lungs in trim, and the larder moderately stored.

There is, therefore, not much to choose between us and the larvæ of dragon-flies in the matter of bloodshed, but the stealth with which the gray insect approaches his victim inspires—nay, that brings deerstalking parlously to mind. Let us have done with comparison!

There is no fairer sight on a summer day than the flight of the great dragon-fly (*Æschna grandis*). His glittering, fearless wings bear him coming and returning many times along the same line so swiftly that the eye

receives no impression of colour, only of glitter and motion. This bold insect is no whit less ravenous than the skulking 'nymph' which he was yesterday. That splendid range of flight is no mere exultation in light or heat: it has its deadly purpose, and ever as he roves *Æschna* snatches other winged creatures and crams them in his maw. But, at all events, he is a chivalrous raider. Compared with his proceedings during the year—two years—three years (nobody knows exactly the duration of the larval phase) which he spent crawling about in the mud, his present career shines like Claude Duval's beside that of the wretch who puts rat-poison in his victim's broth.

The life history of these great flies is, indeed, one long chronicle of rapine, but it is only in its earlier stages that it appears repulsive. The larva or nymph, slow-footed, matching the mud with its dingy hue, easily escapes notice. Often it remains motionless for hours, watching intently with enormous, lidless eyes, until some unsuspecting creature moves near its lair. Then of a sudden it drops a jointed mask from its face; the mask shoots out like an arm ending with a pair of toothed claspers. It is said that the larvæ of some species have the power of making a sudden spring upon their prey, but there is a good deal of doubt surrounding their habits, which careful attention might serve to dispel.

Anyhow, it is beyond dispute that these sluggish larvæ manage to get hold of free-swimming creatures far larger than themselves. A friend of mine was fishing a lake in Sutherland lately, when it fell a dead calm. Waiting for a propitious breeze, he noticed a disturbance on the surface not far from the boat. He popped a landing-net under it and brought out a large dragon-fly larva with its

fangs firmly fixed in the flesh of a living trout, about two inches long. They formed a strange group—the brilliant little fish, a miniature of swiftness and grace, writhing hopelessly in the lethal embrace of a creature truly loathsome of aspect. There they are to this day, consigned to immortality in a phial of spirit.

This *Æschna* larva knew how to spell Opportunity. Had he waited till another summer, the boot might have been on the other leg, for these unlovely crawlers are reckoned a delicacy by many predatory fish. I have found numbers of them, recently swallowed, in the gullet of a small pike.

As if to complete the sinister attributes of the youthful dragon-fly, he is an unscrupulous cannibal. At all stages of life, his first and last impulse is to devour; and whereas mother *Æschna* is prolific and her brood numerous, it often happens that there is not enough provender to go round. In such cases the larvæ unmask and grapple with each other, and he who first gets a good grip with his hinged fangs remains the sole survivor.

They are large, as British insects go, these dragon-flies. *Anax formosus* measures about four inches long; yet are they but degenerate descendants of a formidable ancestry. Monsieur Brongniart has collected fossils from the carboniferous rocks at Commentry measuring two feet across the wings.

XXXII

In the case last described, a small trout was the victim, and had all my sympathy as the nobler of the two combatants. But from the same shelf my friend took down a larger jar, containing seven damning proofs of the profligacy of *Salmo fario*. Often

The Misdemeanours
of Trout

as I have listened to complaints by salmon-fishers about the rapacity of river trout, I have hitherto declined to believe that they did any damage among salmon fry worth mentioning. Fish, methought, so nearly akin as trout and salmon (Scandinavian ichthyologists reckon them varieties of a single species), must surely have some regard for each other's families. Trout, it is well known, feed greedily upon salmon spawn; but then their excuse is that salmon are so culpably careless in their nursery arrangements; they leave such a lot of ripe spawn rolling about in the river-bed that, if the trout did not eat it, something else would. But young salmon—parr or smolts from three to seven inches long—are scarcely to be distinguished from young trout, save by very close scrutiny. Surely, whatever a trout might do in extremity of hunger, it would never make a practice of devouring salmon smolts.

Such was my simple faith, until the contents of that jar shattered it. Live and let live is *not* the trout's motto. The jar contained seven well-grown salmon-parr, weighing together seven ounces, which my friend took out of the stomach of a single trout which he killed with a fly in the Helmsdale last summer (1903). The creature laid claim to the respectable weight of $1\frac{1}{4}$ lb. No less—nay, rather more—than a third of its weight consisted of the indigested contents of its stomach. Yet it had the hardihood to rise at a fly afterwards. 'Tis as though a man of twelve stone should consume 56 lb. of meat at a sitting and remain disposed for any light refreshment that might come his way.¹

¹ See p. 136 for a parallel case to this in a Norwegian river in the same season.

June

XXXIII

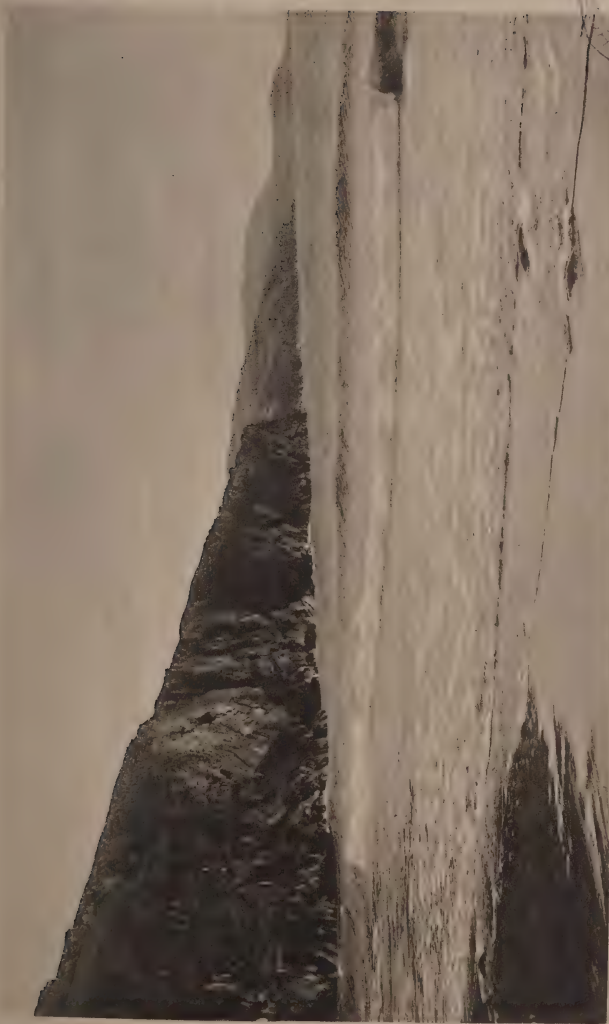
No clearer lesson in glacial geology is needed than that presented by the east shore of the Bay of Luce, **Kirk-** easily to be read by the cyclist as he runs along **maiden** the fine track between the headlands of Sinniness and Craigengower. The road for a dozen miles lies level along a raised beach, interrupted only once by the trap dyke of Caignarget—the Silver Crag. On the traveller's left hand rises a green 'heugh' (this monosyllable defies pronunciation save by a son of the soil)—a huge, steep bank of pasture, brindled with fern and whin; on his right is the rough sea shingle and the wide, glittering bay.

That heugh, varying in height from sixty to a hundred and twenty feet, marks the seaward end of the ancient ice-field, and consists from top to bottom of boulder clay, now closely clad with kindly verdure and flowers of many hues. It was the bed laid down by the ice-mantle, which, never resting, crept forward irresistibly from the high grounds to the sea-level, planing smooth the underlying rock strata, grinding the waste into stiff clay, and carrying with it innumerable fragments of harder material till it met the sea. There the ice-field broke off into bergs, which floated away, leaving the tide to form its beach by washing stones and boulders out of the underlying clay. This is what is recognised all round the western Scottish

shores as the twenty-five-foot beach; formed when the general level of the land was that much lower than it is now. It adds some zest to a summer trip along this shore to let an understanding eye rest upon the traces of this mighty agency, which ceased to act tens of thousands of years ago. Over most of these traces nature and agriculture have drawn a thin veil; but still there are tracts of bare shingle, lying in the very ridges and curves wrought by a tide which flowed before man was.

At Craigengower the scene changes abruptly. The road passes inland, for the way by the shore is blocked by the sudden surge of the great Silurian beds, tilted into splendid cliffs, forming a sea-front almost unbroken all the way to where the Burrow Head frowns across Solway.

Almost unbroken; happily not quite so; for at irregular intervals there are breaches in the rampart, admitting the sea to form miniature fjords and rounded bays with firm, sandy strand. Loveliest of these is Kirkmaiden Bay, site of one of the oldest churches in Scotland and one of the newest golf-links. Of the latter it may be said that you are not likely to be kept waiting at the tee, for the population of the district is sparse and the nearest railway station is seven miles distant—terminus of the feeblest of branch lines. The inexpert stranger will be apt to spend more time in the sand bunkers, which are—well—conspicuous, than on the putting-greens, which are good. Of the church much might be written, had it not all been told already in the *Breviarium Aberdonense*, how an Irish lady of quality named Medana (a tribrach, please), having resolved to devote herself to the new religion of Christianity, was grievously hindered by the amorous attentions of a country neighbour—a certain



Kirkmalden.

1. NEW H. EDWARD ARNOLD 1942

miles nobilis. He became so ardent one day that the lady took refuge upon a rock in the tide, with her two handmaidens—*cum duabus ancillis*. The situation was critical, for that terrible gentleman on the shore might get a boat and come out to them; and even if he didn't, there was neither food nor water on the rock. So they betook themselves to prayer, and the answer came pat; the rock became a boat and carried them safely to the Scottish coast, where Medana built herself a cell and lived in piety and peace, always with her two maidens. But there came a day when *miles nobilis*, having traced his lady-love to her retreat, reappeared suddenly on the scene. Medana escaped up a tree, and remonstrated with Miles from the upper branches. He vowed he could not help it; it was Medana's eyes that did the mischief. 'My eyes!' she cried. 'Is that all? Take them, and welcome!' and so saying tore them out and flung them at his feet; whereat was seen a great miracle, for a spring of pure water gushed from the rock where the eyes had fallen. Medana had achieved her purpose; Miles interfered with her devotions no more.

Now all this happened a long time ago—to wit, at the end of the fourth century of our era—and differs in many particulars from anything likely to occur at the present time; but if any one should be so hardened as to doubt the unsupported statements in the Aberdeen breviary, let him see for himself. There is St. Medana's cell, nestling just above high-water mark under the cliff, enlarged into the parish church of Kirkmaiden, and used as such until the Reformation, but now a gray, silent ruin. There, on the sweep of strand before it, lies the very rock which served Medana and her maids as a ferry-boat, just where

they left it on landing; and there also is the well, bubbling cool and fresh from the rock, much venerated at this day as a wishing-well by lovers and other afflicted persons. To doubt the truth of the legend of St. Medana is to disregard the plain evidence of one's senses.

And what a feast for these senses is offered in this most sequestered spot on this shining Eve of Pentecost. Let us cross the golf-links and leave behind all the heart-searching problems of approach and quarter strokes—the naughty chances of bad lies and fozzled putts. Let us get out upon that bold headland beyond the green, where the rock rampart resumes its southward course. Lying upon that sweet, short turf one may forget all about votes of censure and implacable Whips, conscious only of the glory of earth and sea and sky.

How persistently the past crops up in the present! It is centuries since Gaelic was the speech of people in this district; though it is still spoken in the Isle of Man lying over yonder—pale, but distinct, across the summer sea. Yet the place-names here are nearly all Gaelic. This headland is called Benbowie—the Yellow Crag—and the reason is not far to seek, for the face of the cliff is gilded with a rich yellow lichen—*Parietaria*. Forests have risen and been felled—whole races of men have vanished and made way for others—yet neither winter storms nor summer suns have driven this lowly lichen from its encampment on the rock.

The man, be his eyes like those of Argus, who wants to enjoy all that a holiday in the country can afford, should never leave his field-glasses behind. I should have missed half the delight of this hour but for that part of the idler's equipment; because, far below where

I lay, a beautiful little domestic drama was being enacted, which the naked eye could never have unravelled. The sand-hills about the golf-links are a favourite nesting-place for the sheldrake—a true mariner, never happy or healthy far from the brine. (Note that, O my thoughtless friends, who try to turn this fine bird into an ‘ornamental water-fowl’ by clipping his wings and setting him afloat on a puddle of greasy inland water.) Three pairs of sheldrakes had brought their broods across the little bay to sport and feed among the spray at the foot of these cliffs. Two of these pairs had seven ducklings each, while the third pair had but three; and besides these there was a fourth pair with no following—pathetic figures beside the busy parents. There was plenty of elbow-room; the different families were kept severely apart; Heaven knows how the children could have been sorted out aright if once they had got mixed, for they were all dressed exactly alike, in yellow jackets striped with brown. Their movements were swift and very regular. The ducklings of each family spread out in a skirmishing line, with a parent on either flank, and swam rapidly across the sparkling waves, darting incessantly after some prey on the surface, probably a small crustacean. The mother ducks fed also, though not so eagerly, but the drakes kept a distrustful eye cocked upwards to the cliff where I lay.

The extremely vivid colouring of the adult sheldrake of both sexes suggests a problem in evolution, often propounded, but hitherto unsolved. In every other species of duck the female wears sad-coloured raiment so as to escape notice during incubation. But the female sheldrake differs in appearance from the male only in respect

to her slightly smaller size. She has the same bottle-green head as her mate, the same snowy neck, flanks, and tail coverts, the same rich chestnut shoulders and back, and the same vermilion bill and pink legs. Protective coloration is not in the scheme at all; so what does she do? She lays her eggs and sits upon them underground—in a rabbit burrow hired for the interesting occasion. The unsolved problem is: does she go underground at the period when it is most essential she should escape observation, because nature has endowed her with showy plumage? or is her plumage permitted to be showy because her subterranean habit protects her from the risk incident to those who wear fine clothes?

XXXIV

Yesterday I stood where sea-green Rauma laves the roots of towering Romsdalshorn—the hither Romsdal river-bank a pathless solitude; but along the far side winds the good highway into distant Gudbrandsdal or across the savage Dovrefjeld. A melancholy thoroughfare this in winter, when for three dreary months neither sun nor moon rises above the walls of the most tremendous gorge in Europe, but busy enough and bright in this present tourist season, when big steamers bring holiday-makers by the hundred to make the tour to Flatmark or Ormheim and back. Seventy, eighty, ninety—I care not to count more—there crawl the little *stolkjærres*, each drawn by a fawn-coloured Norse cob. Surely horse-stealing, were it ever a profitable enterprise, might be best undertaken in Norway, where A's horse is distinguishable from the horses of B, C, D, and the rest of

the alphabet by no marks visible to ordinary eyesight. Each *stolkjærre* carries a pair of tourists, the driver walking behind up the gentlest acclivity (so tenderly do these Norsemen treat their cattle), a long string of sightseers, chattering, doubtless, as is the custom of their kind; yet from all the crowd no sound nor syllable reaches my ear, all minor noise being quenched in the majestic roar of the foss of Aarnhoe. They were out of luck, these wayfarers, for yesterday the heaven was overcast. Clouds clipped the mountains of quite two-thirds of their height, and lent a gloomy horror to the rest. The fantastic crests of Troldtinder (the Witch Peaks) and the columnar summit of the Horn were blotted from view; nothing but guide-books to assure the travellers that they were passing between cliffs rising almost sheer more than five thousand feet above the narrow valley; nothing to gaze upon above the green birchwoods, where the chattering fieldfares nest, but stupendous rock-faces, roofed across from side to side by the gray canopy of cloud. British, Germans, and Americans, they say, contribute nine-tenths of the tourist traffic—nations foremost in commercial instinct. To some among those in that long, slow procession it must have occurred to muse on such magnificent wall-spaces wasted—cliffs whereon the enterprising advertiser might yell forth his wares in letters a thousand feet high.

To-day, how different is the scene! The cloud-curtain has rolled away, a glorious sun blazes upon the valley, every pinnacle and peak stands clear-cut against the blue. The snow-field aloft is sweating freely; a score of cascades swing from the cliffs like milky ropes; from time to time a sudden, dull boom marks the discharge of an avalanche,

or a crash and harsh rattle, as of musketry, come from a rock-fall thousands of feet overhead. The bands of winter, long enduring, are loosening at last.

And they told us this was to be such an early fishing season (1904)! Little snow on the fjeld, and what there was to melt soon. Wherefore we resolved to be here betimes, to meet the great fish, which always lead the van, and lo! we have arrived before the van. Only a few scattered scouts have put in an appearance yet. Nevertheless, one of us landed ten salmon before breakfast lately. 'Come, come, I say! If these be your scattered scouts, what is the main column?' True, though, on the honour of an angler. The feat was neither marvellous nor exciting, and can be told in a couple of minutes.

Here was the manner of it. A common river trout of two pound weight having seized a large Durham Ranger, was summarily dragged ashore and knocked on the head. A good enough dish for breakfast; but, before sending him to the kitchen, let us see what gives the rascal such a full waistcoat. Salmon smolts, by the Hokey!—seven, *eight*, NINE, TEN of them! Lovely little fellows, in silvery sea-jackets (this being the season when smolts descend to the sea), each of them a potential forty-pounder.

It was indeed a distressing sight; not surprising, indeed, for, as described above, I have seen seven smolts taken out of the stomach of a Scottish trout weighing but a pound and a quarter;¹ but ten—*ten* in one morning, and looking out for another, as shown by this assassin gulping at a huge salmon fly.

¹ See p. 128 *ante*.

In good sooth, the river trout, a proper gallant in Hampshire chalk stream or Highland loch, can be reckoned but a gluttonous pirate, bad as any pike, in a salmon river. There be some credulous persons, prone to arguing from the unknown to conclusions none the less positive because they are grounded upon no vestige of evidence, who conceive and declare that salmon, especially in the kelt stage, devour their own young. It matters no whit to these wise people that in no single instance has parr or smolt been found within the stomach of a salmon in fresh water. Kelts, say they, are voracious-looking creatures; no animal with such a cast of countenance, such a lean carcass, and such powerful jaws withal, could *help* devouring any small fish that came its way. But men with most experience of salmon and their ways smile at the idea of salmon feeding in fresh water. Let one who, from his armchair in Kensington, or punt in fruitful Thames, declares that it is not in piscine nature that they should abstain from food after leaving the sea—let him, I say, spend a few weeks on the banks of a glacier-nourished, snow-fed torrent in Norway, and afterwards declare what there is therein for salmon to feed on, if they would and could.

Well, as I have said, we have arrived too early, yet is our lot not wholly without alleviation. Let alone the flowers, budding, blossoming, and fading at express speed in these long hours of sunshine—flowers which alone would repay the voyage over the restless North Sea—there are just enough fish stirring to fill one with alternate hope and despair. Two, notably, of grand proportions, took up their station some days ago at the tail of Aarnhoe foss pool, on the very brink of a formidable

rapid. While the weather was cold, nothing would tempt these fine fellows to lay hold; but, fishing there late one evening, one of them came up twice to have a look at my fly. Next morning the wind had gone to the south. I went afloat upon the foss pool at seven o'clock. The moment the fly passed into the swift glide at the tail, it was violently snatched, and 'the band began to play.' Instead of turning down stream, as I feared he might, the salmon steamed slowly up into the deep water, steady and deep, with savage wrenches at the line, after the manner of big fish. For ten minutes or so he circled thus round the pool. I caught sight of him once only, but that once was enough to show that he was of no common dimensions, and I trembled to think how slender was the bond uniting us—single gut only, for the water was mighty clear.

Suddenly, desperately, the fish changed his tactics. His movements quickened; he took a last rapid survey of the pool, diving deep into the 'soda water' at the top; then away—away, with resistless violence, he steered straight for the rapid. To row ashore and pursue on foot was a matter of thirty seconds, yet not before one hundred and fifty yards of line had spun out—line *athwart the stream*, too, and every fisherman will understand the risk in that. A few minutes more of breathless anxiety and exertion. The rod still bends, but the weight of line in those tossing green waves is so great that one cannot guess what may be at the other end. This was soon proved. Winding up tremulously, with aching arm, I brought to hand neither fly nor fish.

This was one of those moments of anguish upon which it boots not to dwell. Rather would I muse upon the

triumph of the following morning, in the same place. The water was lower, and, if possible, clearer, for there had been frost in the night, cutting off the tribute of the snows; wherefore the lure which I selected, in somewhat faint hope of attracting the companion to the lost fish (I firmly believe there were but two in the pool), was a double-hooked 'Silver-gray,' scarcely an inch long. He took it like a tiger, and behaved like a fool. Had he taken the same road as his comrade, the result might have been told in the same terms. But he didn't. He banged about the foss pool, round and round, up and down, plunging like a grilse, and in less than fifteen minutes he pulled the steelyard down to an honest $32\frac{1}{2}$ lbs.

Which was well enough; yet it served to increase my chagrin for the loss of that other.

XXXV

Etymology cannot be classed among the necessities of life. Plenty of successful households are conducted in ignorance of its very elements, Sundal practical men caring much for the use of vocables, little or nothing for their origin. Sometimes, however, the root-meaning of a word is driven home with special significance; and this is the case in Norway, the land of *dals*. Every great river there has its *dal*, just as in the Scottish Highlands it has its 'strath,' in the Lowlands and Northern England its 'dale,' and in the Midlands its 'vale' or 'valley.' In Norway the *dal* receives emphasis from the stupendous mountain barriers which separate one river from another, for the root-meaning of that monosyllable is 'separation'; it is the same word and idea as our 'deal' of cards, 'a great deal,' and even

‘deal’ in the sense of a plank of fir—that is, a tree sawn and separated into ‘deals.’ It occurs in Scottish place-names, such as Dalnaspidal, Dalhousie, Dalmeny, etc.; but here, though the idea of separation is maintained, the Gaelic *dal* has no relation to rivers; it signifies a division of land, a farm. In those parts of the Highlands which were longest under Norwegian rule, the Norse *dal* recurs in its original sense, as in Helmsdale, the Gaelic name whereof is Strath-Ullie.

In Norse *dals* the separation is more than merely physical. It is marked in the manners of the people, and in many of the manufactured objects of daily use; seldom, alas! nowadays, by picturesque variety of costume, for the ancient national dress has mostly given place in the men to garments suggestive of the slop-shop, and in the women (on Sundays and feast-days, at least) to distressing echoes of the Parisian *modiste*. Take a trip by any fjord steamer on a Sunday, and you will see peasant-girls enduring incalculable affliction in holding on fly-away hats of the most desperate design. But in the matter of boats (and every Norwegian is a skilled boatman) the people of the *dals* are exceedingly conservative, maintaining on each river a special type and build, handed down from a remote antiquity. Thus, in Romsdal, which I have just left, the boats are long and broad, with graceful lines, ending in a square, blunt prow, for better use among rocks, and provided with good, shapely oars or sculls. Cross the Dovrefjeld, and descend the Sundal river (the most rapid salmon-stream I have ever fished), and you find a boat in universal use for all the world like a crazy packing-case—short and square, with rectangular, sloping bows, like a Thames punt, propelled

with sculls like exaggerated egg-spoons. Such is the type which the men of Sundal have found most buoyant in rough water, and they venture far more boldly upon rapids than do the people of Romsdal. They would be all right, these ugly, ill-painted, little craft, if they were not so abominably leaky; but it is trying to a foreigner's nerves when the boatman lays down his sculls in some three-cornered eddy among the green breakers, with a roaring foss a few yards below, and begins to bale as leisurely as if he were lying alongside a quay.

To apprehend the glory of Sundal, you should see it before you visit Romsdal. To reverse the order is like coming from Glencoe to the English lakes. The mountains guarding each *dal* are about equal in height. Kaldfonna, whose glacier, suspended far aloft, seems on the point of slipping from its bed and filling the vale with ruin, claims to be fifty feet higher than the Troldtinder of Romsdal; but it does not impend over the river with the like tremendous menace, nor does it toss its crests into such fantastic forms as the other. There is nothing in Sundal like the uncouth abruptness of Romsdalshorn; but the chief difference between the two *dals* lies in their relative width. Sundal is a narrow valley, Romsdal an awe-inspiring gorge.

Sundal is better timbered than its rival. The pine-woods about Hoass are broad and fine—fine, that is, for Norway, which compares ill with Sweden in the matter of forestry. Swedish forest management approaches the German in wise system; but in Norway, except where large tracts have come into the hands either of the Government or of timber companies, the peasant proprietors treat their woods on the cut-and-come-again

principle, and allow no tree to grow to full maturity. They know their own business, perhaps, and it may serve their immediate purpose well enough, for the deal of Scandinavian pine certainly ripens early, and may be used profitably thirty years or so before British Scots fir becomes fit for anything but pulp.

The forests of Sundal clothe ranges of foot-hills, which form a terrace on either flank of the valley, protecting the arable ground and dwellings from dangerous snow avalanches and rock-falls. Only at three or four places does the highroad run along the base of the mountain itself, where sign-posts are erected, with the friendly warning: '*Sne skred! Kjer til!*' ('Snow slip! Hurry up!'). All very well, but nothing is more difficult than to persuade one of these delightful Norse ponies that you *are* in a hurry. No native is ever pressed for time, except in the hay harvest. In summer, one day melts into another with a scarcely perceptible interval of gloaming; and in winter there really is nothing to do to-day which cannot be done as well to-morrow or the day after. The doctor, where there is one, is the only individual who occasionally wants, or is wanted, to hasten his pace, so all parties are agreed that a toddle at the rate of five or six English miles an hour is good average speed for a *stolkjærre*. One does not grumble, so touching is the mutual affection between these pretty, plump, toast-coloured nags and their owners, so gentle the admonition to the traveller, often painted up at the skyds-station: '*Vær god mod hesten!*' ('Be kind to the horse!').

One of these dangerous places in the road lies just opposite the Stor Foss, a roaring rapid, which sweeps down close to the highway to Opdal and the Dovrefjeld.

At the top of this foss is one of the grandest salmon-pools you ever beheld, even in your dreams. A fine stream rushes in at the top, with the effervescence of ten million soda-water bottles per minute. It spreads into a tossing expanse of green water, in the depths whereof loom mighty boulders, fallen from the face of Hoaasnibba above; then the river collects itself, glassy and smooth, ere it bursts into the fresh fury of the foss. Many a good fish has regained freedom in that resistless 'tail,' for no boat can follow down that gorge, and live. A superb salmon-pool, in truth, and one, you will say, that deserves a title of some dignity. It might be known as the Bear Pool, for sometimes of a morning you may find the foot-prints of Bruin in the sand, where he has slaked his thirst during the night; or the Sne-skred Pool, for it lies in the path of frequent avalanches; but, in fact, it is known by a curiously trivial name. Fifty years ago and more a certain English lord (who still lives to contribute to the happiness of his friends) used to come to Sundal each summer for salmon-fishing.¹ One day he dropped his pipe among the rocks beside this pool, as anybody might easily do. A few days later he found it again, which was not such a matter of course. The incident impressed itself upon the minds of those inhabiting a valley where incidents are rare, wherefore men call the place Piba Pool to this day, after the English lord's pipe.

Two or three miles further down the river is signal memorial of the puissance of an avalanche. It is not the falling material itself that the dwellers in this dale have learnt to dread; that, of course, must obliterate every creature and structure in its path; but the foot-hills, as

¹ The present Earl of Leicester, born in 1822.

aforesaid, act as effective fenders for the habitable valley. It is the *breath* of the avalanche that works the widest ruin—the violent outrush of air caused by the sudden fall of tens of thousands of tons of snow. So, near the pretty gaard of Elvershoi may be seen the churchyard of Leuken, with its crowded wooden and iron crosses; but the church, a substantial wooden structure, is no longer there. Some years ago there was a great snowfall from the frowning front of Evelsfonnhei, driving such a mighty blast before it as lifted the church bodily and hurled it some hundreds of yards into the river, whence it was recovered, and now stands spruce and fair, in its gay coat of paint, at the little seaport of Sundalsören, eight kilometres lower down.

There is no valley richer in flowers than Sundal. Unlike Romsdal, there is no regular tourist traffic through it. He who would visit it must do so of set purpose. And well it repays a good deal of extra trouble. But you must by no means miss a leisurely stroll through Hoass Woods. There, under the shapely pines and lightsome birches, is spread a carpet of the choicest flowers, such as I have seen surpassed nowhere else for richness and extent. Lily of the valley, its dainty cousin, the *Smilacina*, butterfly and meadow orchis, wintergreen (both the round-leaved kind, with its spire of delicate bells, and the lowly *uniflora* of exquisite fragrance), cow-wheat, campanulas, bearberry—there is no end to the profusion. And everywhere among these lustier herbs is spread that most fragrant of all honeysuckles, whereon our great master, Linnæus, bestowed his name. I hope that fair lady to whom I once gave his bookplate has assigned it an honoured place in her collection, for it bore the impression

of an intellect as tender as it was powerful. The device consisted of the master's initials, encircled with a wreath of *Linnæa borealis*; beneath it, as legend, the simple confession: '*Tantus amor florum!*' While you linger in these woods, or wander out upon the rocks above, where the great saxifrage shines afar like the *apex et cognita canities* of Stilicho, or the snowy plume of Henri Quatre, you will hear the voices of many birds—the field-fare, the wryneck, the homely chaffinch, and the ring-ousel, with his 'chink-chink.' Even the blackbird is here and there: how different his environment from that of our friend in Kensington Gardens! But hark! What is that ominous sound from the den near the waterfall—half-growl, half-moan? They have told you such creepy tales about bears in this *dal* (was it not upon this very Hoass mountain that a couple of bears drove fifty-seven sheep over a precipice in a single night?), that your thoughts may turn to the quickest line of retreat. But that voice, so full of menace to minor mammals, need have none for you, for it comes from the great eagle owl, of his race the unchallenged king.

XXXVI

It would save some exertion, oral and manual, to have printed answers ready to hand or post to in-quirers upon certain points in natural history. Owls

Questions upon these points recur with as inevitable certainty, and with almost equal frequency, as comments upon the weather. One of them comes among my letters this morning. 'Can you tell me,' asks a lady correspondent, 'what bird says "coo-eeek, coo-eeek," a short, sharp cry, when the shades of night are falling? Not a

single bird book that I have got mentions it.' The inquiry is easily answered. The cry, which (assuming that birds can pronounce consonants, which they can't) I should write 'keeweek' rather than 'coo-eek,' is that of the young brown, tawny, or wood owl, *Strix stridula* of Linnæus, after it has left the nest and before it has learnt to hoot or to feed itself. It is one of the most familiar night sounds in summer woods, yet it is surprising how few people have traced it to its source; and it is quite true, as my correspondent observes, that very few writers on ornithology have thought it worth mentioning. But Professor Newton is too close an observer to omit notice of it from his admirable *Dictionary of Birds* (1893-6). Sometimes one may hear the impatient note from several parts of the wood, where hungry owlets are sitting waiting till the parent bird returns from the chase.

There is not a little popular confusion on the subject of owls, comparatively few people, even dwellers in the country, being able to distinguish one species from another. Indeed, in the matter of owls, as in every province of exact science, our language is a very uncertain medium of definition. There are ten species of owls resident in or visitors to Great Britain—the tawny or brown owl, the barn owl, the long-eared owl, the short-eared owl, Tengmalm's owl, the Scops owl, the little owl, the eagle owl, the hawk owl, and the snowy owl. Take the first name on this list—the tawny or brown owl. All owls are brown except the snowy owl, so that name does not help much to recognition, and might easily get transferred to another species, especially as the feathers of the barn owl are far more tawny than those of the bird we have chosen to ticket as the tawny owl. Again, the Scops owl,

Tengmalm's owl, and the little owl, all infrequent visitors to these islands, are all much about the same size, the Scops owl, indeed, being slightly smaller than the little owl. Further than to point out the inadequacy of a living and changing language for precise nomenclature, it is better not to go in dealing with this group of birds; for, in fact, the classification of owls is still in a terrible jumble, and ornithologists have come to no sort of agreement as to how they are to be named. Externally resembling the hawks, they possess certain anatomical peculiarities which have been held to justify the removal of all of them from the ordinary diurnal birds of prey to a separate and superior order or sub-order.

One gratifying fact has to be recorded about owls as a group—namely, the greater intelligence with which they are regarded, both by people in general, and by sportsmen and gamekeepers in particular. I was brought up to detest them collectively as one of the most pernicious kinds of vermin. On wakeful nights I sometimes fancy that the ghosts of innocent suspects, slaughtered by me in ignorance, are perched on the bed-rail—the tawny owl and the barn owl blinking reproachfully with their great blue-black eyes; the yellow irises of the short-eared owl flaming vengefully; and the orange orbs of the solemn long-eared owl inquiring wistfully how I could be so insane as to murder some of the most industrious servants of mankind. We all know better now, and recognise the benefit that owls confer upon us by preying indefatigably upon rats and mice. That is their staple diet, though it is varied to a slight extent by small birds and large beetles. Nevertheless the charge continues to be made against owls in general that they kill young game,

especially hand-reared pheasant chicks. Let us examine this charge in detail. Of the ten British owls, only the eagle owl, the snowy owl, and the short-eared owl can hunt by day, the only time when young game is abroad. Of these, the first two may be dismissed as beyond the question. Fierce, formidable, and destructive, their ravages would be very serious if we were exposed to them; but we are not. They are among our rarest visitors, appearing only here and there at long intervals under stress of weather, and clearing for foreign parts on the earliest opportunity. As for the short-eared owl—the woodcock owl, as it is sometimes called, because it usually comes with the woodcocks—no doubt it is a destructive day hunter, and would make sad work among young grouse, partridges, and pheasants if such were to be had in winter. For it is only in winter that the short-eared owl is with us. A few pairs, very few, remain to breed in the northern parts of the kingdom; nearly all vanish in spring to rear their young in high latitudes. So the third day-hunting species must be acquitted of poaching on the plea of *alibi*. As to the direct service rendered by owls to farmers, may I refer to my evidence as an eye-witness in a former volume of these notes.¹

XXXVII

I have often been asked, and been obliged as often to own to ignorance of, the nature and cause of those crowded bunches of twigs, like large birds' nests, which disfigure birch trees in so many of our woods. I imagined vaguely that the morbid

Witch's
Broom on
Birch

¹ *Memories of the Months*, Second Series, pp. 99-102.

growth was the result of the operations of some species of gall insect; but it is not so. The true explanation is given in a paper on 'Fungoid Pests of Forest Trees,' contributed to the Royal Horticultural Society's *Journal* for 1905 by him whom, had we the figurative imagination of Orientals, we should reverence as 'the Father of Toadstools'—Dr. M. C. Cooke. The cause of 'Witch's Broom,' it seems, is not to be traced to an insect, but to a minute fungus rejoicing in the sounding title *Exoascus turgidus*. The naked sacs containing the sporidia or germs of this fungus appear in spring or summer upon the under surface of the leaves, which curl up and fade, becoming covered with a dry hoariness. Each sac has a stem cell at the base, through which the mycelium, by means of which the fungus absorbs and stores nutriment, penetrates the epidermis of the leaf. After it has exhausted the supply of nourishment in the leaf, it invades the stem and twig, setting up therein an irritation which causes a dense growth of stunted twigs, which die in time, though perhaps not for many years, and persist so long as the tree lives, or until the branch falls.

The common birch, as we know it, consists of two well-known varieties, which Ehrhart and some other botanists regard as distinct species. One of these, known to nurserymen and gardeners as the weeping birch, is the prevailing kind in Strathspey, and appears to be almost immune from the attacks of *Exoascus*. It is certainly far the more desirable of the two kinds of birch.

To another fungus, *Rhytisma acerinum*, are due those black spots on the leaves of the sycamore (the plane, as we call it in Scotland). The parasite is so universally distributed in British woodlands, that many people

assume that the black discs, sprinkled as regularly over the surface as currants through a well-made cake, are as much part of the regular leaf-design as the chocolate patches on the leaves of dog's-tooth violet. Luckily, the injury done by the fungus seems to be infinitesimal; the sycamore, with its ample foliage, being able to sustain with impunity this moderate tax upon its respiratory organs. The fungus has rather a complex life-history. Its first stage appears in June in the shape of circular yellow patches about the size of a currant, containing cells wherein certain narrow and curved germs are conceived. The patch soon turns black, and nothing further happens till the leaf falls to the ground. In the following spring, the cells in the patch are full of needle-shaped bodies, the ripe spores of the fungus, ready to propagate an apparently aimless and useless existence. How they effect a passage from the soil to the new leaves has not been explained; but the journey must be safe and easy, because among the myriad leaves of the largest sycamore hardly one may be found in August without its quota of black spots.

XXXVIII

Nobody knows Scotland at its best and fairest who is not familiar with its sea and shore, its river banks and woodlands, while summer is yet in its prime. The thousands of visitors who throng its hotels and country houses in the usual holiday season probably find it preferable to the southern realm, or they would not come north; but by the time the grouse are strong on the wing, the season will be already on the wane, the birds will have ceased their song, the foliage

Scotland
at Mid-
summer

have lost its first freshness, the early flowers have run to seed, the pastures have taken on a tawny tinge, and the evenings will be no longer dry and warm and fragrant, for the night will be gaining ground 'by creeping minutes of defacing time,' sending its chill, damp breath before it.

Who that has had the good luck to spend the month of June on the west coast can ever forget the charm of land and sea. It had been a very late spring. April and May (1906) had filled respectively the proverbial *rôles* of March and April in the matter of winds and showers to produce, not May, but June flowers. The flood of blossom, long pent up, was worth waiting for. Every herb and shrub and tree had done its utmost this year to brighten the land, to gladden the heart of man, and to glorify the Creator.

Yes, yes! I know that the scientific botanist has discovered that the true function of blossom has nothing to do with any of these results—that flowers are only made bright and fragrant to attract winged creatures so as to ensure cross-fertilisation; but even *he* cannot deny that the land is brightened and the heart gladdened by the display, and, in common with students in other branches of natural science, he is tending more and more to the conclusion that there *must* be a great first cause, that animated nature is not the outcome of a fortuitous concourse of atoms, and that evolution and natural selection are mere clauses in the law that changeth not. The instinct of worship stirred by floral beauty may be vague and tentative in its objective, but it is irresistible, and ranks among the purest impulses of humanity. Did not Linnæus (or, as some men think, that other great Scandinavian botanist, Dillenius) let his tears flow freely

as he thanked God for letting him see, for the first time, an English common with the gorse in bloom? For gorse will not endure a Swedish winter, and Linnæus had only known the plant hitherto as grown in pots for the conservatory.

The special glory of rural Britain—the feature in our land that most powerfully impresses foreign visitors—is the wealth of verdure and blossom, and the lavish scale on which parks and pleasure-grounds are laid out round country houses. But the perverse fashion which decrees that Parliament shall sit through the months of sunshine debars legislators from seeing their country homes at the fairest, and tends to make gardeners stint the spring and summer display in order to brighten the autumn borders. It is a poor exchange, as many people are beginning to realise; and the feeling in favour of a winter session of Parliament, with the inevitable concomitant of the London season, is growing apace. I write with a mournful conviction, born of the first summer I have been able to spend in Scotland for five-and-twenty years, of the sacrifice exacted by constant attendance at Westminster during that time.

July

XXXIX

THE appearance of a new edition—the hundred-and something-eth—of *The Compleat Angler or the Contemplative Man's Recreation*, gives a welcome excuse for poring once more over the well-conned chapters.¹ It is abundantly illustrated, admirably printed, and judiciously edited by one whose friends will recognise as himself well qualified for the title of the Compleat Angler. Mr. Dewar, as a Hampshire man, exults in the discovery that Izaak Walton, besides his farm near Stafford, rented one of nearly a thousand acres, called Novington or Northampton, near Overton.

Izaak Walton and
Another

The history of this book is really one of the most remarkable in English literature. Angling, indeed, has risen recently to rank abreast of any field sport; but treatises on sport—how prone they are to resolve themselves into monotonous chronicles of wild things slain, varied only by technical instruction wearisome to all except eager tyros, and by rhapsodies which appeal only to the enthusiast. All of these—chronicle, instruction, and rhapsody—hold their place in Walton's pages; but from beyond and behind them breathes an indefinable

¹ Edited by George A. B. Dewar, and published, in two volumes, by Freemantle and Company, London, 1901.

charm, captivating the fancy and holding the affection of one generation after another, even of those who never straightened a line across a river reach. Even in that angry, thunderous seventeenth century, when half of England was at the throats of the other half, and Scotland and Ireland vied in the work of civil carnage, Izaak's placid theme attracted so many readers, that he himself lived to revise a fifth edition, in collaboration with Charles Cotton, whose *Instructions how to Angle for Trout and Grayling in a Clear Stream*, hardly less delightful than Walton's own treatise, imparted instruction beyond the elder fisher's experience, and thenceforward has remained inseparable from *The Compleat Angler*.

Even the Laureate of the Lakes, he who exhorted men

‘Never to blend their pleasures or their pride
With sorrow of the meanest thing that feels,’

fell so entirely under the Waltonian spell as to pencil his well-known sonnet on a blank page of *The Compleat Angler*.

‘While flowing rivers yield a blameless sport,
Shall live the Name of Walton : Sage benign !
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Fairer than life itself, in this sweet Book
The cowslip bank and shady willow-tree ;
And the fresh meads—where flowed, from every nook
Of his full bosom, gladsome Piety.’

No fleeting fascination has Walton's proved to be ; not one book in fifty thousand—nay, five hundred thousand—has stood so well the test of centuries. Moses Brown had a cunning *flair* for good literature when he brought out the sixth edition in 1750 (the first after the author's death) ‘at the instigation of an ingenious and learned friend whose judgment of men and books is

sufficiently established by his own writings in the opinion of the world—Mr. Samuel Johnson, the author of *The Folio Dictionary of the English Language*.’ Now whereas Dr. Johnson once summarised the angler’s vocation in very uncomplimentary terms, he could not be suspected of prepossession for Walton’s theme, but his love of pure literature would not suffer him to let this clear source run to waste. Posterity has vindicated his judgment, and the appearance of a new edition of *The Compleat Angler* affords no excuse for plunging into criticism of the work. It were as seasonable to review Virgil’s *Æneid* or Shakespeare’s *Winter’s Tale*. But forasmuch as none of the present generation, nor, for that matter, of many preceding generations, has any experience of detraction from the merit of Walton’s book or from the author’s rank as a fine fisherman, it is permissible to revive the memory of a rival and bitter critic in both respects.

Sir Walter Scott, as an angler, was not much more proficient than Dr. Johnson, else it would not have been while hunting up *old* fishing tackle that he stumbled upon the forgotten manuscript of *Waverley*. The only safe thing to do with old fishing tackle is to burn it. But Scott’s eye for a choice book was as quick as Johnson’s; wherefore, when a young friend brought to his notice a rare one, entitled *Northern Memoirs calculated for the Meridian of Scotland, to which is added the Contemplative and practical Angler*, writ in the year 1658 by Richard Franck, Philanthropus, he recognised something too good to be lost. He wrote a preface and a few notes for a new edition, which was published by Constable in 1821.

This Richard Franck was a fierce Puritan, a trooper

in Cromwell's Ironsides, and a keen angler. His book is well-nigh as full of theological disputation as of discourse upon fish and fishing; but it abounds in quaint stories and interesting topographical description. Nothing in this changeful, unchanging world is more capricious than the fortune of books. Franck was incomparably a better fisherman and a sounder naturalist than Walton his *Northern Memoirs* is a volume over which any modern angler might pore with delight; yet for every reader who has ever so much as heard of it, there are scores who could pass examination in *The Compleat Angler*. Franck, even at the present day, would be reckoned a good salmon-fisher. Of salmon, as Mr. Andrew Lang has observed, Izaak 'scarcely speaks a true word about their habits except by accident,' and of catching them he knew nothing save by hearsay. He never used, he never even saw used, a fishing-reel or winch.

'Note also,' says he, 'that many used to fish for salmon with a ring of wire on the top of their rod, through which the line may run to as great a length as is needful when he is hooked. And to that end some use a wheel about the middle of their rod or near their hand, which is to be observed better by seeing one of them than by a large demonstration of words.'

Izaak got on very well without a reel. If a fish pulled too hard for safety, he had recourse to the primitive device of 'casting the rod to him into the water, for so I use always to do when I meet with an overgrown fish.' That might serve his turn in the gently trotting waters of Hampshire or Derbyshire, but it would be like to prove a costly expedient in the Trows of Makerstoun or Campsie Linn.

Scott expressed much regret in his preface that Walton

had not made this northern tour instead of the grim Cromwellian trooper; but Scott spoke here as *littérateur*, not as an angler. Indeed he signs the said preface as—

‘No fisher,
But a well-wisher
To the game.’

Anglers will not share Scott’s regret. Izaak’s ‘trembling quill’ would have been whelmed in the billows of a Sutherland loch; his primitive tackle must have been snapped by the first rush of a Brora salmon. Moreover, the prosperous tradesman of Chancery Lane was far too nice a judge of creature comforts to have pushed far beyond the Border after a first taste of Scottish lodging in the seventeenth century. That upset the equanimity even of a tough old campaigner like Franck.

‘O Arnoldus!’ he moaned to his fellow-traveller after a night spent at Sanquhar, or Zanker, as he chose to spell it, ‘I’m almost worried to death with lice; my skin is all motled and dappled like an April trout. Can you blame me to relinquish this lousy lodging when my batter’d sides are pinck’d full of ilet holes? One brigade pursues another, and flight I find the best expedient, for my enemies, I perceive, are so desperately resolved that they’ll rather die than quit the field.’

Franck was Walton’s junior by some thirty years. They met at least upon one occasion in Staffordshire, when they fell to argue about the reproduction of pike. Izaak professed the simple faith that pike were bred from pickerel weed, a proposition which Franck treated with so little respect that, as he tells us, the other ‘huffed away’ and declined further discussion. Mr. Dewar, in his preface to the beautiful ‘Winchester’ edition, is down upon Franck for this, declaring that ‘a fine gentleman

might as well try and bandy words with a bargee as Walton stand up to Franck.' Yet in this, and many other points in natural history, Franck was right and Izaak was ludicrously wrong. Franck probably was reprehensively rude to the elder man, for he never cared to conceal the invincible contempt of the fly-fisher for the bait-fisher. It is very doubtful whether Walton ever practised fly-fishing at all. By his own showing, he was close on forty when he first took to angling, and no man can reasonably expect to become an adept in the higher branches of field sport after middle life. Indeed, Walton never made any pretence in the matter. Barker's handbook was published in 1651, and to him, who was an expert fly-fisher, Walton makes frank acknowledgment in the first edition of *The Compleat Angler*, published in 1653. After dilating upon the virtue of 'a lively, quick, stirring worm,' he proceeds—

'I shall next give you some directions for fly-fishing, such as are given by Mr. Thomas Barker, a gentleman that hath spent much time in fishing; but I shall do it with a little variation.'

Franck's enjoyment, if he had any, of the literary beauties of *The Compleat Angler*, was marred by the technical fallacies he detected therein. He, too, would write a book, show up Walton, and preach the true faith. His work should eclipse the other; in the writing of it he applied to Izaak and his theories terms which nobody would be so profane as to use now.

'The frequent exercise of fly-fishing, though painful,¹ yet it's delightful, more especially when managed by the methods

¹ *i.e.* difficult.

of art and the practical rules and mediums of artists. But the ground-bait was of old the general practice, and beyond dispute brought considerable profit, which hapned in those days when the curiosity of fly-fishing was intricate and unpracticable. However, Izaak Walton has imposed upon the world this monthly novelty, which he understands not himself ; but stuffs his book full with morals from Dubravius and others, not giving us one precedent from his own practical experiments, except otherwise where he prefers the trencher to the troling-rod ; who lays the stress of his arguments upon other men's observations, wherewith he stuffs his ill-digested octavo ; so brings himself under the angler's censure, and the common calamity of a plagiarist, to be pitied (poor man) for his loss of time in scribbling and transcribing other men's notions. These are the drones that rob the hive, yet flatter the bees they bring them honey.'

Franck's essay, though written in 1658, as the title-page testifies, lay for six-and-twenty years unprinted, for in that year his fortunes suffered a shock. Cromwell died in September ; the Royalist tide was rising apace ; for men of revolutionary bent the atmosphere was more congenial to the north of the Tweed than to the south of that fair river.

So Richard Franck packed up his tackle, shouldered his rod, and made a really wonderful tour through Scotland, from river to loch and loch to river, from Galloway to John-o'-Groat's, arguing interminably about religion, catching many hundredweight of fine fish, and poking fun at gentle Izaak, who, wheresoever he fared,—by willow Lea or flowery Test, by lucid Itchen or Shawford brook—was as careful to prescribe how fish should be cooked as in explaining how they might be caught.

Franck added an account of his travels to the chapters intended to demolish the 'scribbling putationer,' as he dubbed his rival, but before he found a publisher Izaak

had been lying for ten years in Prior Silkstede's chapel in Winchester Cathedral. The *Northern Memoirs* were first printed in 1694, when Franck had touched the three-score-and-ten, and the book fell flat. It deserved a kinder fate. Will nobody undertake for this excellent fisherman what Mr. Dewar as editor and Messrs. Freemantle as publishers have performed for Walton?

XL

'Oh, *how* I'd like to be a fish!' quoth a high-born maiden on the banks of crystal Itchen one blazing day in June. Needless to explain that The Goby it was *not* during this dismal summer of 1903 that she uttered the wish, although fish must be about the only class of creature that find this season to their liking. No; it happened several years ago, when midsummer noons were of the kind that turned honest Izaak's thoughts towards syllabubs and beechen shade, and melted his delicate prose into verse.

'Welcome, pure thoughts ; welcome, ye silent groves ;
These guests, these courts, my soul most dearly loves.
Now the wing'd people of the sky shall sing
My cheerful anthems to the gladsome spring.'

The maid was gazing upon a goodly trout, gently fanning itself in poise upon a cushion of water-crowsfoot, enjoying the warmth tempered by the delicious freshness flowing along its sides. Truly his lot seemed far preferable to ours, sweltering as we were in a shadeless meadow under a flaming sun.

Well, I suppose all of us at times have envied the privilege of other animals—the swallow for its flight, the

horse for its might, the hare for its speed, and the caterpillar for its greed; yet had my pretty companion's wish been gratified,—had she been transformed before my eyes to a fish—she might have repented the vagueness of her aspiration.

For, mark you! there are fish and fish. A midsummer trout, gaily spangled and with changing sheen, is hard to beat for beauty; but suppose the nymph had become a goby! The gobies are a family far more numerous than the trouts, and of descent quite as ancient, which counts for something even in this democratic age; but no elasticity of standard can admit them to rank as beautiful. Out of three hundred or so species known to ichthyologists, I am on intimate terms with one only, *Gobius niger*, a little fellow three or four inches long when full grown, delighting in the tumult of surf on rockbound coasts. Like all his kin, he is specially equipped for troubled waters, for his two ventral fins have grown together into a suction disk, wherewith he can cling to smooth surfaces in the strongest tides.

I kept some of these gobies for a couple of years in an aquarium, of which one of their peculiarities made them very entertaining inmates. Normally a delicate, pearl-tinted creature, semi-transparent in parts, the goby has a curiously sympathetic complexion. At the sight of food its head and whole body turn to an opaque inky hue, out of which the eyes scintillate like sparks of green fire.

It is clear that the maiden aforesaid would have found such a property very embarrassing in social life. Imagine one's dismay, after handing a misty dream of tulle and chiffon in to dinner, to find that the mere approach of a

plateful of *consommé* converted her complexion of cream and roses—her ivory shoulders and alabaster arms—into those of a blackamoor! What might not Grimm or Hans Andersen have woven out of such a calamity?

Well, of British gobies, the recognised species not having hitherto exceeded ten in number, the recent addition of another to the list constitutes an event in ichthyology deserving notice, especially as the newcomer exceeds all other gobies in size. How has it escaped the vigilance of naturalists for so long? Nearly fifty years ago Jonathan Couch reported having seen some huge gobies on the Cornish coast, but he regarded them merely as large specimens of the common Rock Goby (*G. niger*). It has been reserved for Mr. F. Pickard Cambridge to discover these species afresh (1902), and, what is more, to identify them with a well-known Mediterranean species, namely, the Giant Goby (*G. capito*). Mr. Boulenger of the British Museum, having found this species in 1901 on the coast of Brittany, suspected that Couch's big gobies might be the same, and asked Mr. Pickard Cambridge to make special search on the Cornish coast, with the result that he found scores of the true Giant Goby, so called because it attains the tremendous stature of nine or ten inches. In other respects it closely resembles the common Rock Goby, having a similar tell-tale complexion; but, although equipped like its relative with an effective ventral sucker, it does not share the affection of that species for the turmoil of the surf. It lurks in still pools, beyond reach of any but the highest tides.

The British fauna has been so closely scrutinised that there remains but a very outside chance of adding a new

species to it, except among the insects or humbler crustaceans. All honour, therefore, to Mr. Pickard Cambridge in respect of his important find.

XLI

In view of the minute variation in structure and coloration whereon modern zoologists base scientific classification, the definition of Man as a single species of a single genus appears inconsistently synthetic. White, red, black, brown, yellow—the entire human race is connoted by the title *Homo sapiens*, an easy, almost an indolent, device for getting over a difficulty of singular delicacy. Civilisation has done so much to blend certain strains which once were very distinct, that to attempt specific distinction between the races of mankind would be to pronounce the majority of the inhabitants of the United Kingdom to be mongrels. Moreover, the problem is complicated by the notable influence of climate and soil upon habits and manners, one that has rendered the English settlers of Ireland *Hibernicis ipsis Hiberniores*—more Irish than the Irish themselves. Nay, have not climate and soil been recognised as among the chief agencies in evolution? From the prohibitive effect of the climate of India upon the constitution of children of European parents, coupled with the vitality of the indigenous population, might be argued the establishment of specific distinction between the white race and the brown, at least as well defined and permanent as that between the white willow-grouse of Scandinavia and the red grouse of Great Britain, or even between the Chinese pheasant and European black-game, which have been known frequently to interbreed. The willow-grouse

An Irish
Salmon-
River

(*Lagopus alba*), sold as 'ptarmigan' by our poulterers in spring, possesses no anatomical distinction from the British red grouse (*L. scotica*); the human ear can distinguish no difference in the voice of the two species; their eggs are identical in shape and colour; the summer plumage of the first has a strong resemblance to the year-round jacket of the second; the sole reason for classifying these birds as distinct species being that the willow-grouse turns white in winter, which the red grouse does not. But a precisely similar seasonal variation in the colour of the common stoat has not brought about the recognition of two species. In the northern parts of Britain this animal regularly assumes the ermine livery in winter, in the southern counties it remains russet all the year through; but the specific identity of the two forms is established by the partial change which takes place in the intermediate region, where the little creature appears in winter with a piebald coat of white and brown. Peradventure some will bear to be reminded that the humble British stoat (*Putorius erminea*) is none other than the animal which, in more rigorous climes than ours, produces ermine fur, so highly prized in days of chivalry that it was reserved under statute for the exclusive wear of royal persons.

It is obvious, then, that men of science are not yet agreed upon a thoroughly satisfactory system of classification; and that if the tendency to subdivision be indulged further, it will be difficult to refrain from applying it to the human race. Of such slender consistency ran the thread of my meditation lately, while casting angle more or less ineffectively—more rather than less—upon what is naturally one of the finest salmon-rivers of Ireland.

Naturally, you observe; for here, as elsewhere, certain agencies have been set at work for the destruction of salmon, as if the ultimate object were the extermination of some detestable vermin, instead of the reasonable capture of the most valuable of our food-fishes. I shall notice presently some of the causes which are divesting the Erne of its pristine eminence among the waters of the Emerald Isle. Eminent, perhaps, it still remains, but only by reason of the harsh treatment which other rivers have received.

Sport upon the occasion of my first visit to the Erne was slack, very slack. I incline to account for the interlocutory style which Izaak Walton, Richard Franck, and other seventeenth-century writers gave to their treatises upon angling, as the result of the intermittent character of the sport, rather than of the innate garrulity of fishermen. It is true that there is always opportunity, largely availed of, for coffee-housing by the cover-side; there is gabble as well as gobble at shooting luncheons—a meal shamelessly and blamefully exaggerated of late; but of all field-sports, none lends itself so naturally as angling to the *molliæ fundi tempora*, during spells of enforced inactivity while waiting for the rise to begin, or for a cloud to obscure the sun, or for some other of the occult causes which rouse fish from the torpor to which they are so lamentably prone. At all events, the persistency with which angling literature was cast in conversational form, down to the days of Sir Humphry Davy and Christopher North, seems consistent with this explanation; and were I to undertake a detailed narrative of my experience on the Erne, it should consist of dialogue, almost wholly on one side.

What in the creation of fishes has all this to do with the origin of species, which we were discussing overleaf? The reader is entitled to such explanation as may be had.

I had an attendant—a gillie, as he would be termed in Scotland—and it was his remarkable vivacity and fund of anecdote which tempted me to speculate whether he really was of the same species as certain dignified disciples of Lacon who had condescended to minister for me with the gaff beside Scottish rivers. Sport was slack, as I have explained; but, in proportion as the gloom deepened upon the prospect, did Paddy Rogan, scion of an illustrious family of salmon-fishers, exert himself to cheer my drooping spirits with a flow of reminiscence and commentary. Only a phonograph would serve to reproduce the delicate brogue and infinite play of stress and expression; even that would not reflect the *obbligato* accompaniment of gesture and feature. It was the entertainment derived from these that set me speculating upon problems of ethnology, mentally comparing my attendant with his Scottish homologues, Highland and Lowland. Highlanders have the same fascinating address which distinguishes the Celt wherever he may be found; but, be it the Scottish atmosphere or merely contact with the taciturn Teuton, something has robbed him of the captivating irresponsibility and garrulity of his race. Nevertheless, both Irish and Highland gillies give you to feel that they are there for your service and pleasure, and manage to fill you with a comfortable sense of your own proficiency; whereas in the Lowlander you are conscious of the presence of a relentless critic at your elbow. You may feel certain that if a big salmon rises

short he will report you as having snatched the fly away from the fish. You have a partiality, it may be, for some particular fly (you must be less or more than a human angler if you have not) which you propose to display upon the bosom, say, of Tay or Tweed. Speedily will the boatman recall you to a sense of your position. More than common must be your resolution and courage if you persist in the exercise of private judgment, and hesitate to attach to your line whatever your tyrant prescribes as appropriate to prevailing conditions of sky and water and the idiosyncrasies of fish in that particular river. My private conviction is that such idiosyncrasies exist only in the imagination of anglers. During the considerable segment of a century that I have been at the game, I have witnessed a complete revolution in the hypothetical preferences of salmon in different rivers. Lures are described as indispensable now, which, thirty years ago, would have brought inextinguishable derision upon the greenhorn who proposed to apply them to the catching of fish. Thirty or forty years further back William Scrope had detected the fallacy in his own shrewd way.

‘A great deal of mystery,’ says he in his inimitable *Days and Nights of Salmon Fishing*, ‘is made on every river as to the flies you should fish with. Thus when a novice arrives at his fishing station he sends for the oracle of the river, pulls out his book crammed as closely as a pot of pemmican, and displays before him the devices of an Eaton, an Ustonson, or a Chevalier. Nothing dazzled, Donald much admires what one may be, and what the other; this he rejects as useless, that he laughs to scorn. . . . He examines some twenty dozen of your best flies, and, pulling out one from the number, tells you that might serve well enough if it had different wings, a different body,

and a yellow tail. . . . I would advise you to acquiesce in the predictions of the said oracle, simply to save the trouble of argument. One thing you may be sure of, namely, that you may as well attempt to make the Tweed run back to its source as to shake his opinions.'

Tom Stoddart tells how the prejudice against gaudy flies, when they were first introduced from Ireland, was so strong that the Tweed boatmen solemnly accounted for the scarcity of salmon in the river by the hypothesis that they had been frightened back to the sea by the exhibition of these outrageous novelties. Nowadays prejudice prevails as strongly as ever, but it is all in the opposite direction. Silver and gold, highly dyed silks and furs, with plumage of the most brilliant tropical birds, are deemed as essential to success as the dun turkey and gray mallard were of yore. Are we to believe that Tweed salmon have modified their taste? or is it conceivable that *Homo sapiens*—Man the Wise—is not immune from delusion?

Having landed myself plump in the interminable controversy about salmon-flies, I can ill resist the temptation to put on record the nativity of one which has found great favour of recent years, and is, or was of late, reckoned deadliest of all on the Redbridge and Broadlands waters of the Hampshire Test. It goes by the name of 'the Mystery,' and displays a pair of canary-coloured wings over a body of salmon floss gaily ribbed up with silver twist. A quarter of a century ago or thereby a local fisherman was plying his craft on the Suir, famous at that time for heavy spring salmon, and plenty of them. Since those days it has been reft of its glory by means of immoderate netting. Well, this fisherman, whose name

I forget, had been working all morning with the 'collie' or stone-loach, and had done no good. Presently he saw an immense fish rise in a good taking place, but the monster would pay no attention to the bait; so thinks Patsie, or Tim, or Joe, whatever his name may have been, 'Maybe it's the fly he'll be hankering afther.' But divil a fly he had with him, for they used to rely greatly on the collie in the spring months when the water was cold. Now Tim (I must call him something) was a matter of six Irish miles from his own home, and by the time he had travelled there for his fly-book and back to the river, the February day would be far spent. But within half a mile of him was a certain farm, the habitation of a pretty girl with whom Tim stood on the best of terms. Thither he hied, and finding the nymph of the cot busy about the doors with a worsted shawl over her shapely head—

'Ah now, Phaybie, avourneen,' said he, 'but aren't you the gerr-l that can help me this day. I seen the biggest salmon in Dawson's Cradle that ever swam in the Suir, and divil a thing will he taste but an iligant fly; and it's meself that come away in the morning wid nothing but the bare hook on me. I'm afther skaming for some feathers and silk to tie one up this very minute.'

'Feathers and silk, is it?' replied the maid, entering with spirit into the project. 'Faith, it's a bad quarther ye come to for silk; sorra a bit is there in the house. But for feathers, there's lashins of them; for wasn't I plucking a poulthry this very morning?'

'Och, the divil sweep all the poulthry in Munster!' cried Tim. 'It's not thim kind o' common craythurs will do the trick; it's something delicate I'm wanting. Now there was that quare design ye carried on your pretty

head the time I walked home wid you from the chapel ; there was an iligant yulla feather in that, I mind.'

'Musha, but it's this man is not blate,' mocked Phœbe, 'the way he'd take the feather from my Sunday hat.'

'Ah, be aisy now,' pleaded Tim. 'It'll niver be known upon it what I'd take, no more than a tinkan o' wather out o' the well.'

Tim had an easy victory. If he had asked for half of Phœbe's modest wardrobe, she would have sacrificed it joyfully for her lad's happiness ; and well the rogue knew it. Indeed, the few yellow strands he plucked did not appreciably diminish the glories of Phœbe's gala hat ; but the silk was not forthcoming. As he stood meditating, the problem solved itself. His eye fell on the fringe of Phœbe's hood, which was of pink worsted. To detach a few threads of this, to lap it on a large bait-hook with waxed thread, and to whip on the top the yellow feather to serve as wings, was quick work for his practised fingers. No doubt he did not omit to signify gratitude to his benefactress in a way agreeable to her feelings, for there was a bewitching colour in her cheeks as she watched him striding back in the direction of Dawson's Cradle—a colour not to be accounted for entirely by the keen February air.

By good luck no other fisher had come that way during Tim's absence from the river, and Tim lost no time in presenting his handiwork to the big salmon. The suspense was not prolonged. No sooner did the spoils of Phœbe's toilette pass over the spot where Tim had marked the monster rise, than the line stopped short as if hitched upon a rock. Tim raised the rod smartly, and was 'in him.' To cut a long story short, twenty minutes later he

was administering the *coup-de-grâce* to a noble salmon weighing 56 lb.

Of course there was much curiosity on that riverside as to the lure which brought this noble quarry to its doom; but to all inquiries Tim gave but one answer, 'Ah! that's a mystery.' When at last the secret leaked out (for was there not a woman in it?), the pink-bodied, yellow-winged fly took its place among standard patterns as 'the Mystery.'

Now I must scramble back from this unpardonable digression to the banks of the Erne, where I stood one fine evening last July prepared for action. The day was far spent, for it was afternoon before the Belfast train, loitering through leagues of verdure, had deposited me upon Belleek platform. A couple of miles on a car to my riverside quarters ought not to have taken long, but the greater part of the distance had to be performed at a walk, by reason of the excruciating nature of the metal with which my landlord had thickly coated the 'boreen,' or tortuous lane leading to his cottage; for he had inherited some money from America, and was bent on improving his property. This metal consisted of slabs of waste pottery—great shards from the Belleek works. 'Oh, the finest material in the created earth for making up a road,' explained Rogan; 'it'll take a thousand years to wear it away.' So it might, methought, being by nature imperishable, and deposited in such impregnable lumps as seemed to defy, rather than to invite, traffic. At last we arrived at the cottage where a friend had secured accommodation for me, and excellent the quarters proved to be, with the river quite handy. It did not take me long to unpack my kit, don my waders, and hurry off under a burning sun to the waterside.

From boyhood I had been accustomed to read enthusiastic descriptions of this famous river and the grand sport it afforded; but, making allowance for the fond glow thrown by patriotism upon so much that is Irish, I was prepared for rather less than I found. The Erne is indeed a noble salmon-river. Its course from Lough Gowla in County Longford to the sea at Ballyshannon is some seventy miles, draining an area of about 1700 square miles; but of this length seven-and-thirty miles is buried in upper and lower Lough Erne—two vast sheets of water covering between them upwards of 37,000 acres. For the salmon-fisher, interest is concentrated upon the five miles or so of river between Belleek, at the foot of the lower lough, and the iniquitous boxes—cruives, we should call them in Scotland—at the Assaroe Falls below Ballyshannon bridge.

It is always a difficult matter to compare the volume of one river with that of another. Difference in the nature of channels deceives the eye; the effects of rainfall and drought render the average flow uncertain; therefore it is with hesitation that I estimate the Erne below Belleek as equivalent to the Tweed at Melrose when in fishing trim. But the Irish river runs with a far steadier, fuller flow during the summer months than does the Tweed, albeit the great natural advantage of abundant water-storage has been sorely impaired by human interference, presently to be described.

Now I had a fancy that morning for displaying to the salmon of the Erne a particular fly which had served me well in both Scottish and Norwegian waters—a modest affair, having a sober black body touched up with silver twist, wings and hackle of the black-and-white barred

feather of the silver pheasant, and just a spark of scarlet. If there be merit in variety, methought, it must be found in presenting to the fish something unlike what they had already been made too familiar with. But long acquaintance with dour Scottish gillies undermined much expectation of being allowed to indulge my fancy. Sure enough, Rogan extracted from his inner pocket a parcel of dainty works of art—real fine art—chiefly creatures with golden-yellow bodies and rainbow wings. It was with a sinking heart and a stammering tongue that I explained to Rogan my ambition to try an experiment—I put it no higher than that—with one of my own flies. Well knowing how ruthlessly your Scot would have crushed any deviation from local orthodoxy, I was little prepared for the easy compliance shown by Rogan. ‘Well, sorr,’ said he, with the utmost good-humour, ‘I never seen the like o’ that tried in this river: we mostly use the yulla-and-grouse or the green Parson; but sure your honour’ll not be wrong, the way ye have so much exparience of fishing, and we’ll give it a thry, anyway.’

With that he restored to his pocket his assortment of local favourites, throwing a courtly veil over his invincible distrust of novelties, lest he should wound my feelings.

Now I need not inflict upon the reader a description of our sport. In literature every salmon is a bar of silver; the fish invariably rushes about like a motor-car; the reel screeches; the greenheart bends; the angler ‘gives the butt’ at precisely the moment to prevent irremediable disaster, applying himself to his flask when the fight is over and the quarry safely ashore. The story has been repeated a thousand times, and in much

the same language. There is the less occasion to dwell on the events of my first afternoon, seeing that my reel screeched not at all, nor did the greenheart bend, save when a back cast lodged the black-and-white fly firmly in the upper branches of an ash-tree.

The fact is that every inch of likely water had been well flogged before I could wet my line—a condition tending to damp the ardour of the most sanguine fisherman. The seven beats into which the river is divided are allotted in rotation among the anglers; but by an irritating regulation no man retains exclusive right to his beat for the day after one o'clock. After that it is go as you please, and there ensues a concentration of forces upon the best places. The inferior places having been thoroughly combed over in the morning, there remains little chance of sport in them, and the afternoon competition for the superior 'throws' is a trifle disconcerting to a stranger.

They were all occupied by the time I arrived, and I had to content myself with a stretch of water which Paddy Rogan pronounced to be 'as full of life as a deserted graveyard.'

Falling back for recreation upon Paddy's conversational powers, I found them far beyond the common. Beginning with the state of the crops, we touched naturally upon the land question. It was discouraging to learn from him local opinion of Mr. Wyndham's Act.

'The new Land Act, is it?' quoth he; 'och, it'll just be the father and mother of a botheration. I'm telling your honour what it'll be. It'll be like taking a bone and throwing it into a kennel of hungry dogs. 'Deed will it. Every man'll be at his neighbour's throat.'

‘Well, but,’ I observed, ‘the tenants are not pleased with the landlords they have got. Will they not be better contented when they are quit of them?’

‘Well, yer honour, I’ll tell ye the God’s truth; I’ll not desave ye’ (an exordium which one soon learns to regard with peculiar distrust of what follows). ‘It’s meself is not aware how it may be in other disthricts of Ireland, but divil a fault have we with the landlords that’s here. They’re the beautiful gentry, and of the fine ould stock; and they were having me told they’d have to quit. An’ fwhat’s to take the place of them? Not but what the best, or some of them, isn’t gone already. There was Tom Conolly, now, maybe your honour would know him about London. Ye did not? Ah, but he was the bhoy to send sparks through the darkness. And the fine property was his! Ye see them woods and hills fornint us beyant the river? Well, they were all Tom Conolly’s, every sthick and sthone in them; from one end of the estate to the other was six-and-thirty Irish miles; forty thousand pounds of rint, and a quate ten thousand a year in County Kildare besides. Ah! Tom Conolly, he was the raal gintleman.’

‘He’s gone, is he?’ I interjected.

‘Ah, gone is it?—it’s long since he was afther going, and there has been no man to fill the place of him since. It was the heart was too big in him. I seen him in Ballyshannon on fair-day, coming to the window of the hotel where he’d be afther taking his refreshment, and him with the fire-shovel full of sovereigns in his hand. The sthreet would be full of counthry people, and he up with the window and scattering the gold among them. B’lieve me, it was then ye’d see the scrummaging.’

‘Well,’ I observed sagely, ‘that’s a ready way of getting rid of property.’

‘Thru for you, sir; but there was far more than that to it. Misther Conolly was great for the horse-racing. He was an aisy man with his tenants, and some of them would be as slow in paying the rent as they would be fast to pay their respects, but divil a disthress he would ever lay upon them. Every year before the Derby race came on, he would ride round a fourth of the estate, and says he to each one, “It’s five years’ arrear ye’re owing me. Pay me one year’s rent, and I’ll wipe off the lave.” Quick they were to pay on that balancing, so he’d get one year’s rent off a fourth of his tenantry, and away he goes to London and loses it all in the betting. And next year he’d be afther doing the same on the next fourth of his estate, till the throuble came over him entirely, more’s the shame, for he was the mighty, grand gintleman. Then they put the property up for sale, and didn’t they cut five great estates out of the one that had been? Not a dhry eye could ye behold in the counthry on that blessed day, for a good friend to the poor man was Tom Conolly. But we’ll have no more excursions of that manner undher the new law—a black end to thim that had the making of it!’

It occurred to me that Paddy’s censure of the Land Act may have been embittered by reason of his being no farmer, and therefore not entitled to advantage from it. Perchance, also, it was coloured by anxiety to say what might be agreeable to one of the land-owning class.

Paddy Rogan was rich in reminiscence of various anglers whom it had been his lot to attend upon the Erne.

‘Lord —— was the keen fisher, him that was Lord-

Lieutenant when the throuble was with the Land League. There niver was any onquateness in County Fermanagh, though; they're a dacent lot of bhoys in these parts, let alone the loud talking at election times and the like. All the while they were stretching landlords and agents in the south, there niver a gintleman need look over his shoulder within twenty Irish miles of Ballyshannon. But they were afther telling his Excellency terrible tales in Dublin Castle, and, let him go where he would, there was an inspector and four constables following on the side-cars and a detective in private clothes on a horse.

'So when he comes to the bridge one morning, and asks quite agreeable-like about the fishing, and the wather, and the way we would go, says I, "Me lord your Excellency, the first throw is immadiately upon the spot you stand, and a good throw it is for a new-run fish, the way there's a nice sup o' wather in her to-day." So I puts a box for him to stand on, the same as I was afther doing for your honour this morning, convanient for him to angle nicely over the par'pet.

'Now your honour would be noticing for yourself the way the bhoys and gerr-ls gathers round when they see a gintleman begin to fish off Ballyshannon bridge. Av coorse they like to see the sport, tho' be the same token it's little sport they seen wid your honour this morning. But his Excellency grew unaisy-like when the people came round him and he looked to the right and left and every way to see that the polis were handy; so says I: "Me lord your Excellency, maybe you'd be afther going to a more private spot, and indeed the fishing is betther above the eel-weir. If your lordship's Excellency will step this way along the path, the polis on the cyars can

thruvel up the road quite convanient." So I brought him up to the Garden Wall, a notable throw it is, while the polis drove along the road wid the breadth of the demesne betuane us and thim, though that was unbeknown to his Excellency. I observed he was very onquate, so says I: "Me lord your Excellency, keep your mind quite aisy now. There's niver a bhoy in this barony and the nixt would lift a finger at you, only to make a riverence to ye. If you had a park of arthillery round you, it's not a pin the safer ye'd be."

'Well, his Excellency could throw a good line. I seen it wasn't the first time, by many, he came to the fishing. But Lord assist the poor man! from the moment his fly was on the wather, divil another look he gave to it till he was for making another throw. He was for ever and always turning this way and that; be gob, I tuk pity to see him, the way thim naygurs in Dublin Castle had put the dread into him. But by the time I had brought him as far as the Grass Yard, the nervousness quit him entirely, and he applied himself to the fishing like a masther. He tuk a salmon upon the Grass Yard and two more upon Laputa, and wasn't he the proud man that day.

"By gum!" says he on the suddint, "where's my escort at all? for it's time I was getting home," says he.

"Is it the polis ye mane?" says I; "faith, it would be work for Isaiah and all the prophets to tell where they might be by this time. Thim'll be kaping aisy along the road, the way I instructed thim, till they would come up wid your Excellency; but they'll be far enough the time that is, be rason the road's beyant the river, and not very convanient at that."

‘Wid that he gives a down look, and says he, “What made ye do that, anyway?” but I’m afther pulling the salmon out o’ the bast, and laying them out sthraight upon the green, and as soon as he sees them doesn’t he brighten up, the way they made such a beautiful spectacle, wid a five-and-twenty pounder at the head of the class.

“Me lord your Excellency,” says I, “ye have no more need of an escort, barring meself, on this river, than ye have of the tabernacle of Moses. It’s meself will be afther bringing your Excellency the soonest way to Cliff” (for he was stopping there, ye see, convanient for the fishing), “and proud they’ll be to see you there wid the fish ye have.”

“Oh, it’s not for myself,” says he, wid a kind of a shame on his face, “but the men had their orders,” says he; “but lead on,” says he, “for it’s time I was home,” says he. So I brought him straight to Cliff, and quit him there, and wasn’t it then the fun began? I was travelling down the road to Ballyshannon, when I heard a horse going the great gallop behind me. I looks round, and who’s this but his Excellency’s detective. He pulls up all in a lather, and says he, “You’re the man attending upon his Excellency at the fishing,” says he.

“Faith, I’ll not be afther giving you the lie,” says I, “for that’s the truth, supposing ye only spake it in accident.”

“Oh, hould your fulish tongue,” says he in a rage, “an’ come along wid me to the polis-office, and answer for your conduct in misguiding the escort.”

“Be gob, but you’ll have to show me the warrant,” says I. “It’s a quare pass things is come to if the likes o’ you is to give private gintlemen the word of command. Who are ye, anyway? A stranger in the land, I reckon,

thrashing upon the road like a grievous mount-the-bank."

"I knew him for the inspector, sure enough; but I wasn't a hair in dread of his bad word, the way I knew his Excellency was well pleased with the sport he had, so I spoke up to the fellow, being ready to give him all the Mamelukes in the dictionary if I had any more of his hectoring.

"I'm a detective officer," says he, "and I want to know what ye've done with his Excellency."

"And what would I do wid him," says I, "but bring him the soonest way to Cliff the time he was past wid the fishing. It's little ye'll be afther detecting, Mr. Detective, if ye're onawares that his Excellency makes Cliff his residence the time he's got the fishing."

"Then what in thunder made ye direct the escort to hould the highroad?" says he.

"Be the same rason that the side-cars wouldn't thravel convanient by the water-side," says I.

"And is his Excellency in Cliff at the present?" says he.

"Divil another roof will ye find over his head this blessed minute," says I, "and small blame to him, for it's a lodging fit for the Emperor of Roossia," says I.

'Wid that he turns his horse and is battering along the road to Cliff. Sure your honour may believe the chat we had in Ballyshannon that night about the lost Lord-Lieutenant!'

On a subsequent day Rogan treated me to some recollections, bewildering in their variety, about another noble lord. I had been fishing the cast, or 'throw,' as they have it in Ireland, which, from the left bank, is called the

Sod Ditch, but when fished from the right bank is known as the Angler's Throw, just above a foss over which the river discharges itself with much tumult. In this pretty stream I had met a lively grilse, whereof the landing occupied time out of all proportion to its dimensions, by reason of the long and deep wading necessary to enable the angler to get his fly over the lie of the fish when the river is on the low side. When the water is heavy the fish lie near the sides. There is more wading in the Erne than in any water of similar length and volume that I have ever fished. It is the practice for the gillie to accompany his employer into the water, to guide him along the practicable lines, which are often tortuous, and could not be found out by a stranger. The current is very strong in many places, and the angler, with the water brimming under his arm-pits, is often grateful for the support of a steady shoulder. To hook a strong salmon from such a standpoint is far more nervous work than it is from boat or bank. A false step at such a moment ensures a thorough ducking; and in such a place as the Angler's Throw, where the river sweeps swiftly towards a boiling gorge, there is added an exhilarating sense of peril. A blunder here might easily cost a man his life.

Some temperaments are impatient of over-sedulous assistance; those who remember Lord Randolph Churchill will hear without surprise that he took his own line not infrequently. The same impetuous temper which made him throw up the seals of the Exchequer may be traced in a scene described by Paddy Rogan.

'Oh, but he was the kind-hearted gentleman,' said he, no doubt with a suitable recollection of the scale of Lord Randolph's *douceurs*; 'and notorious fond of the fishing

he was; but if anything crassed him, or if I was to spake what it wasn't his pleasure to hear, wouldn't it make a man thrimble to hear the swearing he'd employ!

'There was one day Lord Randolph was for fishing the Angler's Throw your honour's just come off. There was a good sup o' water in her that day, nine inches more than ye see at the present, so there was no wading to be done. He was come to the place where he should have come off the side, round yon big rock ye see there fore-ninst ye, be rason that he culdn't follow a fish if he hooked one in that spot. So I called to him that it was a dhangerous place for losing a fish, and that he should come away to where I'd show him.

"Be dam!" he cried. "Paddy," says he, "d'ye think I haven't fished far bigger wathers than this in Canada? Hould yer gab," says he, "till I ask ye, and don't be interfering."

'The word wasn't past his lips when a fish came to the fly in the very sthricht o' the sthrame. I noticed the tail of him as he turned, and wasn't he as nate a pattern of thirty pounds as a man might see?

"Hould to him, me lord!" I cried; "if he do pass the gray stone, it's niver on this side of Assanroe we'll behould that fish again."

'He held to him royally, and I came down and tuk the rod from him the time he would get round the big rock, and have a clear run before him. Well, he got round it, and I passed the rod back to him, the big fish all the while wavering in the strong wather like a flag. His lordship scarcely got a houl't of the rod before the fish got his broadside to the sthrame, and away he raced, the reel screaming out like a woman in her throes.

“Follow him, me lord!” I cries, “follow him’s fast’s ye can, or ye’re bate intirely,” and away he goes, swearing the way that should burn the beard off his face, only he didn’t carry one. Your honour sees that slidder of rock beyant there? Well, when his lordship came to that spot the heels went from under him, he came slam on his back, and stunned the point of his elbow; the rod cracked off at the first joint, and away went the lave of it down the line to join the fish. His lordship was on his feet in a moment; but didn’t the line break, and him left standing with the empty butt in his hand. There was an end of the swearing, but he turned and gave me a look would blister the paint on a new door. Then he up with the broken rod, and the fine reel was on it, and flung them both into the river as far as he could, and they away after the great salmon.’

Such was the fashion in which Paddy Rogan would run on by the half-hour together, setting me to speculate upon the reason for so great a difference between Irish and Scottish gillies. It may be only skin-deep after all; but even so, what are the atmospheric, social, or other causes which render the difference so universal and inevitable?

Other subjects for cogitation suggested themselves during the frequent idle intervals in my sport, not unmixed with melancholy. It distresses one to behold the sporting resources of Ireland run to waste. There is probably no other territory in the world which combines within similar limits such natural advantages for angling, shooting, and hunting, nor is there anywhere a native population more keenly sympathetic with every description of field-sport. That sympathy which, rightly controlled, would add an inestimable charm to the sportsman’s

enjoyment, has been allowed to run to seed in indiscriminate poaching. Of all the branches of sport, fox-hunting alone has received full development in Ireland; probably no one has partaken of its highest ecstasy who has not lived with hounds as they raced over the wide pastures of Meath or raved upon a burning scent in Kilkenny. There is no complaint upon that score, and, whatever be the political future of Ireland, it is probably in her vales and upon her uplands that the huntsman's horn will continue to resound long after it is silent elsewhere. It is many years since, in one of the most disturbed districts of Ireland, I enjoyed a run with what was called 'the Fenian pack.' The county hounds had been boycotted and put down; but the 'bhoys' had raised a pack of their own, and cordially welcomed the appearance in the field of those of the landlord class who were not too proud to join in their sport.

Game-preserving, except in the great demesnes and on the moorlands of the north, may be reckoned impossible, owing to the excessive subdivision of the land into small holdings; nor, having regard to the exceedingly artificial phase into which shooting has passed in the sister isle and the bloated scale of 'bag' which seems necessary to satisfy modern marksmen, need that be a subject of much regret. Wild-fowl and snipe will continue to resort to the bogs of Ireland, woodcock to her infrequent woodlands, and much will remain for the recreation of him who does not measure success by hecatombs.

But of the angling wealth of Ireland her sons are sad spendthrifts. The angler deplures the destruction of the fairest trout-streams by flax waste, or by the cruel use of the deadly wood-spurge, by which miles of water may be

depopulated in a single day. The economist grudges the direful diligence, the lawless devices, which are reducing salmon to the vanishing-point, and laments the waste of an asset which, rightly administered, would attract a full share of the wealth which is lavished upon Scottish and Scandinavian rivers. There is nothing for which so many people are ready to pay liberally as salmon-fishing; nowhere that it is so plentifully provided by nature as in Ireland.

The Erne has been longer in succumbing to ill-treatment than other rivers because of its glorious capability, but it is going like the rest. Until lately, the vast expanse of Lough Erne kept the river full during the summer months; but the drainage works have altered that. The whole level of the lough has been lowered three feet or thereby, all to save some hundreds of acres of bog-land; the floodgates are regulated so as to run the water off as quickly as possible, and without regard to the fishing interest, so a far larger proportion of salmon than of yore fall victims to the deadly boxes or 'cruive-dyke' at the mouth and to the nets in the estuary. The use of drift-nets, a destructive device which has been pronounced by the English and Scottish courts to be a fixed engine, and therefore illegal in an estuary, has been largely extended in Donegal Bay, and must ultimately put the finishing-stroke to the Erne as an angling river unless effective means are taken to stop them. But who is so sanguine as to look for energy in anything Irish except poaching? Of the spawning salmon that run up the numerous affluents of Lough Erne, very few survive to taste the salt water again. Darkly discoloured and unsightly with slime, as spawning salmon always are,

they are eagerly hunted to death on the redds, making one sigh for the common-sense that would apply the money spent in ineffective artificial hatcheries to the protection of the normal operations of nature. Let any one in search of an example of the result of wise administration of a salmon-river take the Aberdeenshire Dee. Twenty years of sagacious management have multiplied by ten the rental of rod-fishings alone, while the remaining nets produce as many boxes of salmon as formerly went to the market from the whole river. If Sir Horace Plunkett, who has laboured with such admirable diligence, enterprise, and success for the cause of Irish agriculture, should apply his energy to the regeneration and development of Irish inland fisheries, he will be working upon a latent source of wealth to his country. But whereas in the first he had a nation of farmers to work with, in the other he will have to encounter a community of poachers, and the task will be proportionately harder.

XLII

I have made comment elsewhere,¹ and at some length, upon the indifference of Nature to the sufferings of her children. We are assured that not a sparrow shall fall to the ground without the Father of nature's sanction; yet we see innocent creatures exposed to suffering so cruel and protracted that, if man were the agent, he would be branded as a heartless monster. It is not merely the perpetual preying by the strong upon the weak—that is part of a mighty scheme whereof we see only a small segment, enough to bewilder us; but from time to time we witness

The Heart-
lessness of
Nature

¹ *Memories of the Months*, Second Series, p. 4.

incidents involving excruciating torment without any apparent object. Last Whitsuntide (1905) I was riding through a Highland deer-forest on one of those days whose exceeding glory almost surpasses our capacity of enjoyment, and infuses into our meditations a strain of such melancholy as once found expression by a seventeenth-century poet.

‘Sweet day ! so cool, so calm, so bright ;
The bridal of the earth and sky ;
Sweet dews shall weep thy fall to-night,
For thou must die !’

For miles around the broad, brown moors lay open to the sun, swept by shadow-belts cast from fleeting clouds. Ben Nevis still held a great snowfield aloft upon his crouched back; the lowlier summits were still seamed and flecked with drifts—the litter of a bygone winter; but on lower levels, all was busy, riotous summer—the true ‘sweet o’ the year.’ Towards evening, as we rode, a pretty object appeared above the path, in vivid contrast to the treeless waste. The sides of a little glen rose so steeply as to have allowed a few rowans and birches to root themselves among the rocks, and to flourish secure from browsing deer. The rowans held up their flat white saucers of bloom amid the fresh verdure; the birches waved their airy plumes in the breeze; ferns and shade-loving herbage thickly clothed the ground below. It was a charming little oasis in the waste of heath and rock, yet it had been the scene of a gruesome tragedy not many months before. Suspended by the antlers from a forked rowan-tree were the remains of what had once been a noble stag. Eagles and ravens had played havoc with the carcass: the hide fluttered in tatters

round the bleaching bones; but enough remained to explain what had happened. The beast had been rubbing his antlers upon the tree, as the manner of stags is; the ground had given way under his feet, and, slipping over the steep face, he hung, unhurt but helpless. None may tell how many suns rose and set while the vigorous life ebbed slowly away; one cares not to imagine how the poor creature suffered from hunger, thirst, and torment of flies. It is pleasanter to hope that the agony of such a fate is deadened in proportion to the limited intelligence of the creature.

The Indian Field, a newspaper published in Calcutta, lately recorded a similarly harrowing accident to a panther which fell to a sportsman's rifle. It was found to be in a miserable state of emaciation, and, like all diseased or moribund wild animals, terribly afflicted with vermin. The reason for this was soon discovered. A porcupine's quill had pierced the tongue from below, penetrating to the throat so as to prevent entirely the passage of food. The torture of such a wound must have been ceaseless and intense, besides the suffering arising from hunger and thirst. It is this sort of thing that makes the Scripture appear a hard saying which declares of the sparrows that 'not one of them is forgotten before God.'

XLIII

After all, a large proportion of terrestrial animals are vegetarians in diet. The greatest mammals
Terrors of are exclusively so, such as elephants, rhino-
Subaqueous ceros, giraffes, and all the ungulates, browsing
Life peaceably together on the green things of the earth.

But how different is the condition of things in the waters under the firmament. Even in fresh water, except the great manatee, a few fishes such as the carp, most of the molluscs and the larval forms of certain insects, every creature is intent upon pursuit of another. This was forcibly brought to mind lately, when I went bass-fishing in Milford Haven. The summer sun lit up the broad bosom of that noble fjord; a sweet south wind flowed in from St. George's Channel; the waves sparkled; the land ran out in long green fingers fringed with russet cliffs; never did the face of nature seem more benign, more full of promise of peace. Yet what a fierce drama of carnage was being enacted under those blue waters. We scanned the haven till we detected a flock of gulls at work—black-backed gulls, herring gulls, black-headed gulls, common gulls, and kittiwakes, fluttering in an excited crowd over a couple of acres of sea. This betokened a shoal of 'brett' or herring fry, moving in with the tide, no doubt in busy pursuit of some minute crustacean, and well we knew that bass would be as busy beneath the surface as the gulls were above it. Heading the launch towards the spot, we were soon as hard at the work of destruction as any bird or fish of prey, and sundry silvery bass, with a few garfish and gurnards, paid the capital penalty of voracity. Qualms of compunction for the destruction of such beautiful living creatures were allayed by the reflection that every bass drawn inboard meant the salvation of scores of little herring.

Truly, life under the ocean wave must be an anxious affair. It is well for fish that their eyes are so set on the side of the head, enabling them to see what is behind,

as well as what is before, above, and around them, else few of the weaker species could survive. As it is, what a vast destruction of life goes on daily, myriads of the feebler existences being sacrificed to support the more robust, and they, in turn, exposed to assault by mightier foes in the shape of seals, porpoises, and sharks of many kinds. Of the million tiny eggs shed by a fair-sized cod, what an infinitesimal percentage ever reach maturity; but the true tyrants of the deep—the sharks and rays—produce but few and large ova, each protected from assault by a strong, horny envelope.

Next day being Sunday, fish were secure from human molestation; but scaly and feathered hunters were as busy as ever. Strolling up the pretty valley of the Cleddau, I came upon a shallow pool embosomed in a natural wood of oak. A solitary herring-gull floated on the water, which mirrored the sky and trees. There could not be a more lovely, tranquil scene. But here, too, the work of death was in progress. As I looked, the gull rose a few feet in the air, plunged headlong into the shallow, but rose again empty-mouthed. She repeated the manœuvre several times with the same result; till at last she brought up an eel about a foot long, and flew ashore. Through my glasses I watched every movement in the cruel struggle which followed. The eel fought bravely. Time after time the bird nipped it in her strong bill and dashed it against the stones, and every time the eel managed to wrench itself free. For ten minutes, at least, the fight went on, till at last the strength of the victim began to flag. Seizing her opportunity, the gull gripped it by the middle and, though the eel still wriggled vigorously, she managed to swallow it whole. Then she



Great White Campanula at Newry.

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flew off to the river to enjoy the process of digestion, the pleasure of which must have been enhanced, no doubt, by the dying throes of her prey within.

XLIV

Among all the forms of multifarious beauty which the enterprise of the great horticultural firms and the industry of their collectors have added of late to the furnishing of British gardens and shrubberies, the most conspicuous have come from China—the Flowery Land. The richness and variety of the native flora in that vast realm seem inexhaustible; but none of the recent introductions exceed in splendour the Giant Lily (*Lilium giganteum*), which was first seen in this country a couple of generations ago. For forty years it has flourished and flowered in the garden that I love, yet even at this day, when hardy plants are all the fashion, it remains a comparative rarity; and even where it is cultivated, it seldom is given the conditions necessary to secure the finest display.

Dr. Augustine Henry, who, collaborating with that other famous collector, Mr. Wilson, has added so much to our knowledge of the flora of Central and Western China, was the first to reveal to me the secret of success. Put this lily in a shady spot and leave it alone. It is essentially a woodland plant, shunning the full blaze of sunshine and coveting the true forest soil. Plant it on the northern margin of a wood or high shrubbery, or group the bulbs along woodland paths and glades, in deep, cool soil, and it will reward you by its glorious, glossy heart-shaped leaves, from amid which rise in June

massive, columnar stems, bearing aloft great creamy blossoms of exquisite fragrance. In October a liberal harvest of seeds may be gathered, which should be sown in a shady border. They lie dormant a whole year, and then germinate freely, whereby the stock of this majestic foreigner may be increased to any extent. Nay, more: owing to its endurance of shade it sows itself freely in British woodlands, where the undergrowth is usually so rank as to choke the finer forms of vegetation. Lately I saw the sides of a ditch in a Surrey oak wood thickly peopled with self-sown seedlings of this lily, promising a glorious display in summers to come. Dr. Henry tells me that it is among the most conspicuous features of Chinese forests. Note, however, that he who would enjoy flowers from seedlings of this lily should start sowing betimes, for the plants must be from seven to ten years old before they blossom.

In this country the giant lily has shown as yet no sign of being susceptible to that fatal rust or fungus which has affected the white Madonna lily and the scarlet turncap so disastrously. The beauty of these two species is so peculiar that the utter loss of them from our gardens would be irreparable. They still make vigorous growth in spring, but in most districts they are affected in May by a blight which sears the roots and stem-leaves, so that the plant has no strength left for the supreme effort of putting forth blooms. I have seen the disease baffled by planting the bulbs upon chalk laid in a deep trench; but chalk is hard to come by in northern gardens. An expert friend recommended kainit, spread on the surface round the plants in the proportion of two ounces to every square yard of ground. I tried it; and found that I

might as well have spread so much brown sugar. Mr. Thomas Smith, of the world-famous nursery garden at Newry, has been successful with fortnightly spraying during the growing season with sulphate of copper, an ounce to the gallon of water, increased to two ounces to three gallons as the plants get stronger. In his opinion the fungus only attacks the leaves, as the bulbs remain quite healthy. It certainly is worth the amateur's while to endeavour to defeat a disease which has robbed the summer border of much of its chief glory.

The said nursery garden at Newry is worth a long journey to see, and it takes a long day to become acquainted with its riches. The plate represents a bank of white campanula, a variety of the kind called Venus's Looking-glass, and named "Newry Giant" in Mr. Smith's catalogue.

August

XLV

IN all the sportsman's calendar there is no day to which
‘The such reverence is paid as the twelfth of August.
Twelfth’ Just as in the early Victorian era, when
mention was made of ‘the Duke,’ everybody knew that it
was the victor of Waterloo who was referred to, so in
these early years of Edward VII. there is no ambiguity,
in sporting circles at least, when people are heard dis-
cussing their plans for ‘the Twelfth.’ Bitter taunts are
often hurled at Ministers by the Opposition in Parliament
because of their anxiety to bring the session to a close
before this famous anniversary. Mr. Crooks last week
(July 1905), pleading the cause of the unemployed, was
specially pungent upon this point. ‘Are they not of
more value than many grouse?’ was, in effect, the burden
of his indictment. But the truth is that the red grouse
is made the scapegoat for the procrastination so success-
fully practised in Parliament—for many nights squandered
in desultory discussion, in wilful obstruction, in ponderous
votes of censure, and exasperating motions for adjourn-
ment. The session must be brought to a close some time
or another: fifty years ago or more it became the custom
to prorogue the Houses in time to allow members to get
to the distant moors; and it is found convenient to main-
tain the somewhat fictitious obligation to set them free

for that purpose. But, in fact, it might surprise some of us were it possible to present statistics showing the use made by legislators of their regained freedom. Rest assured that venatic ardour is not the main impulse which sets men longing for the free air of the country—

‘When the summer runs out like grains of sand,
And fans for a penny are sold in the Strand.’

Anyhow, we are all grateful to the little red bird for the historic excuse he provides for escaping from London in the dog-days. The late Duke of Richmond was as staunch and keen a sportsman as ever drew bead on a stag or wielded a ‘wand’ on Speyside; yet, as all men know, he never grudged the best of his years to the service of the state. One first of May he was a guest at the annual banquet of the Royal Academy, and took the opportunity, so highly prized by those invited, of wandering round the rooms before dinner was served, to have a quiet look at the pictures. He stood long in contemplation before a painting by Sir John Millais, representing, with all that great artist’s force and fidelity, a Scottish moorland with the flush of August on the heather. A friend happening to pass, stopped and asked the Duke how he liked the picture. ‘Confound the fellow!’ growled the Duke; ‘he has no business to paint like that: makes me wish I were five hundred miles away from this beastly town.’ Ay! the waft of the heather and the crow of the grousecock—what country-bred Scot can ever be indifferent to them? even though the last wish in his mind be to shoulder a gun and pursue the brave bird to its death. The heather, indeed, he may sniff in many lands, for it is the most widely distributed of all the heath family, spreading itself from Galway to the Ural Moun-

tains, from the Arctic Circle to the Engadine; but the red grouse is the exclusive property of the British Isles. They tell me that they have succeeded in naturalising it on certain German moors; but it will require close evidence to convince me of the genuineness of grouse made in Germany! Baron Dickson, also, claimed to have established this bird forty years ago on a waste near Gothenburg in Sweden, but we don't hear much about it now. The red grouse remains the only species of bird which may be justly claimed as exclusively British and Irish. Originally, no doubt, it was derived from a common stock with the willow grouse, *Lagopus albus*, which inhabits sub-arctic regions both in Europe and America, and, turning white in winter, is sold by thousands as 'ptarmigan' in all our great towns. In summer plumage the two birds still bear a pretty close resemblance to each other; their voice, eggs, and anatomy are not to be distinguished apart; yet no man would hesitate to class them as distinct species. The red grouse never 'shows the white feather' in winter; he never is found far from the heather, which affords his staple diet, and he never enters a wood; whereas the willow grouse frequents thickets of birch, willow, and stunted shrubs, subsisting upon buds and berries in their season. One rival, indeed, has been set up to dispute the claim of the red grouse as the only exclusively British bird in the diminutive person of the St. Kilda wren. Admitting that severe and protracted isolation and peculiar environment have induced permanent features in this little bird differentiating it from the common wren of our hedgerows, and constituting it a separate species, it is not so clear that the St. Kilda wren is different from the wren of the Faroes

and of Iceland, which is distinguished as *Troglodytes borealis*.

Probably in no former season has there been such a large number of grouse in the British Islands as there are at this moment; because, although its natural haunts have been seriously encroached upon by agriculture and other industries, the result of the modern system of driving, which has superseded the older and more interesting method of shooting over setters or pointers, has been to increase indefinitely the fecundity of the race in good seasons such as the present. The reason for this is pretty clear. In shooting over dogs, it is the young birds that suffer most severely, offering, as they do, much easier shots than their older and warier parents. But in driving, the chances of war are reversed. The old birds, flying foremost, come first to the guns, offer the most conspicuous mark, and are the first to fall. This is of twofold benefit to the stock. Young birds, in their second and third years, are far more prolific breeders than older ones; and old birds, strong and excessively jealous of the presence of others, soon drive younger ones off the ground, and the stock falls numerically low in consequence. Driving had its origin on the moors of Yorkshire, where, for reasons not easy to explain, the birds, as shown by the oldest extant records, have always been far more difficult of approach than on more northern ground. Take, for instance, the following extract from the diary of that archetype of gunners, Colonel Peter Hawker. Writing in 1812 from a public-house near Bowes, 'where I bought some shot,' said public-house being 'kept by one Kitty Lockey, who horses the mail,' the Colonel notes—

'Having heard that grouse were become so wild and scarce

that a man who had a few days ago killed a brace was spoken of as having done wonders, I despaired of getting any ; but, having travelled till I had scarcely strength from my Peninsular wound to go farther, I was resolved, at all events, to look at the moors and, if possible, see a live grouse, which I had all my life been longing to do.'

Well, there was no difficulty in *seeing* them ; he put up about forty brace within half a mile of his inn ; but the job was to get them within range.

'At last, Nero came to a point, and, as luck would have it, the brow of the hill was between him and his bird ; and I, by creeping up, took him on the hop, fired directly he rose at about 45 yards, and down I knocked him, in the act of crowing at me—a fine old cock grouse.'

To one accustomed to read about or contribute to latter-day bags of grouse, which are calculated in hundreds of brace, the gallant colonel's exultation over a solitary cock may seem almost puerile ; but, I'll go warrant for it, his delight was as genuine and legitimate, honest man ! as that of any modern expert who, supported by two or three loaders, 'downs' four birds out of every pack that passes over his butt. The fact is that grouse-shooting, like too many other wholesome, harmless recreations, has been made too much of a business. It has been tainted by the poison of record-breaking, that bane of all honest sport. If AB and his party kill 300 brace in a day, it is duly recorded in the newspapers, and CD is restless and miserable till he has slaughtered 350 brace.

XLVI

The advent of the motor car has been hailed by a large proportion of the community with as much dissatisfaction as the earliest railway promoters had to encounter. The tranquillity of country life has been destroyed, they say, and dust renders way-side dwellings uninhabitable. It cannot be denied that a good deal of alarm and discomfort has attended the introduction of this kind of locomotion; but there is reasonable hope of remedies being devised for both these disadvantages. Meanwhile, it is permissible to be grateful for the opportunity created of visiting out-of-the-way parts of the country, and of making acquaintance with scenes which, but for motor cars, must have remained unknown to all except persons of unlimited leisure. And, depend upon it, the better travellers become acquainted with the beauty and interest of rural scenes, the more solicitous they will show themselves to respect their peaceful charm. But for the facilities of motor travel, there is no probability that I should ever have beheld, as I did lately, one of the most venerable and primitive places of worship in England. It is the parish church of Greensted, a hamlet between Chipping Ongar and Epping Forest in the county of Essex, consisting of a wooden nave, tower, and spire, and a small brick chancel. The tower and chancel present no peculiar features of interest, the latter dating probably from the sixteenth century, and the former being somewhat more ancient. Wooden church towers are by no means uncommon in Essex; there are good examples of fourteenth and fifteenth century work of this kind at Chipping Ongar,

An Ancient
British
Shrine

Margarelting, Blackmore, and other places. The remarkable part of Greensted church is the nave, which measures just under thirty feet in length, is fourteen feet wide, with walls five feet six inches high. These walls consist entirely of great slabs of oak, split trunks felled in the primeval forest nine hundred years ago. They stand just as they were reared, it is believed, as a temporary resting-place for the body and relics of St. Edmund the Martyr in its transit from London to Bury St. Edmunds in the year 1013. Not *quite* as they were first set up; for in 1848 it was found that their lower ends, mortised into the oaken sill which rested upon the bare ground, were showing signs of decay, so they were underbuilt with a course of brickwork. Four-and-twenty of these rough-hewn slabs suffice to form the south wall of the nave, and five-and-twenty compose the corresponding north wall. It is impossible to gaze unmoved upon this ancient timber, hewn from the greenwood of Saxon England, which has withstood storm and sunshine, rain and frost, through all these centuries. We may not live to see it at the end of a thousand years of exposure, which, if it has not come yet, will arrive at latest in the year 2013; but, barring accident by fire, there is no probability that these venerable planks will fail before that time.

Sceptics may ask how the age of each individual plank can be verified. Is it not possible that some of the timbers may have been replaced from time to time? No, it is not; for this reason, that every slab was mortised into the wall-plate above and the sill below, so that the roof must have been removed before a single timber could be renewed.

Now, as to the known antiquity of this sylvan chapel. It is dedicated to St. Andrew, but its fame is derived from its having been the temporary resting-place of the corpse of Saxon Edmund. In 870 the Danish chiefs Henger and Hubba invaded East Anglia, and defeated the Saxons under King Edmund at Thetford, in Suffolk. There was a terrible slaughter of the vanquished; Edmund was pursued, first to Framlingham, then to a wood at Hoxne. He was offered his life if he would abjure Christianity, and cede half his realm. Refusing these terms, he was bound to an oak, and made a target for Danish bowmen. Finally, Henger hacked off his head. The oak to which he was bound, or, at all events, one reputed to be St. Edmund's oak, fell in September 1848. It measured twenty feet in circumference, and it is said that an arrow-head was found embedded in the trunk; but I am unable to quote chapter and verse for this statement. The king's body was recovered after the Danes had moved off, and was buried at Hoxne, at that time called Eglesdene or Heglesdon. Tradition runs that his head was recovered at a distance from the body, closely guarded by a wolf, which went quietly away when people came in search of the royal remains. This incident is commemorated in a wooden carving in St. Mary's Church, Bury St. Edmunds.

For thirty-three years Edmund lay where he had been buried; in 903 his remains were removed to the wooden church of Bedrichesworthe, where King Athelstane founded a monastery and dedicated it to the good king; for Edmund by this time had been canonised. The fame of his sanctity effected that in which the imperial authority of Rome had often failed. The Roman

emperors decreed that Jerusalem should be known as Ælia Capitolina, and that London should be called Augusta. Neither decree took effect, except in official correspondence, so indelibly do native names attach themselves to localities. But Bedrichesworthe waived its ancient title out of reverence to the royal martyr, and has been known ever since as Bury St. Edmunds. (Note that the Bury has no reference to interment, but simply means 'burgh' or 'borough,' the town of St. Edmund.) The Danes, these scourges of all our coasts, attacked Bury in A.D. 1010, and burnt the monastery. The monks escaped to London, carrying with them the remains of St. Edmund.

It is good to muse awhile in this quiet little churchyard, hardly out of the roar of London, and to recall some of the changes—social, ecclesiastical, and political—which have taken place since these humble, venerable walls were first reared.

XLVII

It is pretty safe to affirm that all the reflections which
 British occur to the modern mind upon subjects of
 Woodland human interest are but echoes from the past. They may find utterance in words, but all that can be said has been written by thoughtful men of old. Thus when one begins to speculate what would happen to these islands of ours, now humming with industry and thronged with folk, if agriculture and manufacture were suddenly arrested and the bees were to desert the hive, he has only to turn to Holy Writ or the classics to find that his train of thought has been anticipated. 'Upon the land of my people,' sang Isaiah, 'shall come up thorns and briers;

yea, upon all the houses of joy in the joyous city. . . . The multitude of the city shall be left; the forts and towers shall be for dens for ever, a joy of wild asses, a pasture of flocks.' More colloquially, Horace had the same idea in view when he penned his *Naturam expellas furcâ, tamen usque recurret*.

This line of thought was started yesterday while I was waiting for a train at the Mansion House station of the underground railway—surely, of all places, that where the pitchfork has been applied most rudely to nature. Beside one of the rails I noticed a green flutter of leaves, which, on closer inspection, turned out to be a seeding wych elm about nine inches high, and therefore probably in its second year of growth. Here was Nature engaged in her eternal work of reconquest. This little seed, whether wind-wafted or dropped from some citizen's bundle of country greenery, had rooted itself in the cinders of the track, and, were all traffic to cease on that line to-morrow, would grow into one of the mightiest of our native trees, scattering its progeny 'upon all the houses of joy in the joyous city.'

Can't we take the hint? Here are all those who understand the matter, warning us that, while the consumption of timber throughout the world is increasing at a prodigious rate, the visible supply is vanishing. Every first-class power in Europe—France, Germany, Austria, even Russia—is husbanding its forests, deriving much wealth from them, and laying up store for the future. Many of the smaller states are doing the same. Belgium derives an annual income of £4,000,000 sterling from 1,700,000 acres of forest. Even Spain takes care of her cork woods. And as for America, whose forest resources

erewhile seems inexhaustible, listen to President Roosevelt's warning to the first Forestry Congress held at Washington in 1905: 'If the present rate of forestry destruction is allowed to continue with nothing to offset it, a timber famine in the future is inevitable. Remember that you can prevent such a famine occurring by wise action being taken in time; but once the famine occurs there is no possible way of hurrying the growth of trees necessary to relieve it.' Only in Great Britain, with her matchless soil and climate for producing timber, are trees treated as a rich man's luxury, for the adornment of parks and the harbour of game. No state forests? Oh yes, to be sure there are: 64,000 acres in the New Forest alone, besides other extensive woodlands. But these are no source of revenue, present or prospective; much the reverse, to the tune of many thousands a year. The nation has willed it so; decreeing, through Parliament, that the New Forest must not be handled scientifically, but must be preserved as a sort of stupendous Chelsea Hospital for cripples and moribund veterans. The consequence is that to meet our industrial requirements we are paying upwards of sixteen millions sterling annually to the foreigner for timber, every foot of which, under a more provident system, might have been grown at home. Well, suppose we do buy instead of produce, we can afford it. Yes, but how long will the supply last? How long before the increasing demand will raise the price beyond what it will pay our manufacturers to give? Not very long, according to all appearance. Germany now uses up all she grows; so does the United States. For coniferous timber, which constitutes four-fifths of our consumption, we rely on Canada, Sweden, and Russia.

Here and there in the United Kingdom there is clean grown timber to be found, but it cannot rely upon a good market, so completely has the trade been diverted into foreign channels; nor can the home market be restored without the establishment of conditions essential to every business connection—namely, uniform quality and steady supply. This is hardly the place to discuss a question of this magnitude. It is reassuring to know that it has at last been forced upon the serious consideration of the Government, and that there is some prospect of some approach to a system of remunerative forestry being undertaken by the state.

The lover of the picturesque is wont to shudder at the suggestion of systematic forestry, apprehending the exchange of liberal park scenery for the monotony of German pine woods. His alarm is groundless. Let the parks remain: there are hundreds of thousands of acres of hill pasture, returning at present a rent of 8d. to 2s. an acre, which, under proper management, would yield a return equal to 8s. to 11s. an acre per annum over the whole period of the crop—say 100 years. The reader, with bitter experience perhaps of the costliness of forestry as a pastime, shrugs an incredulous shoulder at this statement, but the average annual yield of German state forests is 11s. an acre, that of private woodland 8s. And in Germany it is only the poor lands that are planted. Nay, but Germany is far off: let me give a single example of the profit that may be earned in our own dear fatherland.

Of all the conifers introduced to this country during the last century, the Douglas fir promises to exceed all others in combined rapidity of growth and quality of timber. This beautiful tree, botanists have decided, is

neither a spruce nor a silver, but a *Pseudotsuga*. Luckily, for everyday use, it bears the noble name of Douglas, in memory of the intrepid collector who discovered it, and sent home the first seeds from Vancouver Island about eighty years ago. The value of the Douglas fir to British planters may be estimated from almost the only example of its treatment under proper forestry conditions in this country. Even that example is on a very limited scale, but affords indication of what may be expected from this tree when we have been cured of our mischievous practice of overthinning, and have learnt to grow it in masses; close enough to produce clean stems without side branches, and extensive enough to enable the trees to present an even front to the wind. In 1860 eight acres of moderate land at Taymount were planted with Douglas fir, four-year-old seedlings from two trees at Scone Palace. The plants were set far too wide—12 feet apart, or 308 to the acre, the spaces being filled with larch, 908 to the acre—so little did men understand forty years ago the requirements of the Douglas fir. In twenty years the Douglas had far outgrown the larch, which were all thinned out and removed; and in 1887 the mistake was made of taking out 620 Douglas firs, to allow the rest to ‘furnish,’ leaving about 210 Douglas per acre. Now ‘furnishing’ is precisely what the Douglas fir ought not to be allowed to do. These trees threw out strong side branches, to the infinite deterioration of the quality of their timber. Nevertheless, in 1900, exactly forty years after planting, a Perth wood-merchant offered ninepence a cubic foot for the standing crop; the price current at the time for mature larch and Scots fir being respectively 1s. and 6d. a cubic foot. Note that the period of maturity

in larch and Scots fir must be reckoned, not at forty, but at eighty years. This offer was estimated to be equal to £200 per acre, or £1600 for the 1680 Douglas firs standing on the eight acres. It was declined, and the trees are still growing vigorously; an incentive, surely, to both the state and to private landowners to develop the magnificent resources of their woodlands.

As to the danger to the picturesque, let no man doubt the beauty of rightly-ordered woodland. If he does so, let him wander through the Duke of Atholl's well-managed forest at Dunkeld. And set this as an axiom, that the finest park scenery can only be had as the outcome of forest treatment. Trees are creatures of company. Set them alone, and they spread into cabbage-like forms, and never rise into the stately columns such as can only be produced by the discipline of the grove.

XLVIII

It is well perhaps for our comfort that we are not all familiar with the life-history of the common **The** house-fly (*Musca domestica*). We tolerate its **House-Fly** presence, provided it does not appear in too great numbers, regarding it much as we do the house-sparrow—a natural domestic companion. Yet of all creatures in the heaven above, or in the earth beneath, or in the waters under the earth, it is wellnigh the filthiest in its origin and habits. I do not speak here of the blow-fly and flesh-fly, whereof the occupation, loathsome enough as it appears, is that of beneficial scavengers; nor of the bot-fly and gad-fly, which, if they be not unmitigated evils, the good purpose which they serve has yet to be revealed;

still less do I refer to that horrible insect, *Lucilia hominivorax*, which used to cause the death of so many French convicts in Cayenne by laying its eggs in the mouths and nostrils of its sleeping victims. My concern is only with that irrepressible little imp whose gyrations may be observed in almost any inhabited apartment in the realm. This creature is bred of corruption; without corruption it cannot exist, for its eggs, numerous as they are, require the heat generated by putrescence to vivify them, and the toothless maggots hatched from the eggs are so equipped as to derive nourishment only from substances disintegrated by decay.

Choosing, therefore, a suitable nidus, either in ordure or rotting vegetable matter, the parent *Musca* deposits the comparatively insignificant number of four or five score eggs, neatly arranged with her ovipositor, from which in about four-and-twenty hours are hatched the legless maggots. These larvæ eat voraciously, and grow with great rapidity; one of them has been observed to increase one-third of its own length within twenty-four hours. On the fifth or seventh day, the outer skin hardens and turns brown, as the larva changes into the pupa or chrysalis stage. The next five or seven days are passed without movement; but a wonderful operation is in progress within that tight little case, altering the inmate from a simple worm-like creature to a highly-organised dipterous insect. The metamorphosis complete, the dry skin cracks, and out crawls a pale, flabby ghost of a house-fly, with pulpy, clammy wings, incapable of flight, and a curious membrane on the forepart of the head, which rises and falls with the action of the tracheæ or breathing apparatus. A brief exposure to the atmo-

sphere suffices to work further change. The body darkens to sooty black, the wings expand into gauzy, glittering structures, the forehead hardens, and the compound eyes develop precocious vigilance. The maggot, which was an almost featureless cylinder divided into thirteen segments, has now got 'a waist,' and a figure elegantly shaped into head, thorax, and abdomen, with six serviceable legs furnished with patent soles or *plantulae*, enabling the owner to defy the laws of gravitation when it desires to walk upon vertical or inverted polished surfaces. The other most notable organs which it has acquired during pupation are a pair of lovely wings; a pair of organs behind these, called *halteres*, which some consider to represent rudimentary posterior wings, but which others regard as being connected either with respiration or with hearing; a long and complex proboscis, formed for suction; and a pair of compound eyes of extraordinary vigilance and keenness, enormous in proportion to the size of the creature.

As aforesaid, the mother fly lays but four or five score eggs in a setting, which is a trifling performance in comparison with the fecundity of many other insects; but whereas she repeats the process three or four times during her life of a few months, and that her offspring take up the same game immediately after passing through metamorphoses occupying less than three weeks, it has been calculated that one female house-fly may be the source of a posterity numbering about two millions in a single summer.

The diet of the perfect fly is far more varied than that of the maggot whence it sprang. Every grade of society is open to it; its tastes are catholic; it may satisfy its

appetite from the peaches on the table of a prince, or from the perspiration on the brow of a peasant. But it must always return to the dunghill to perpetuate its species. Just as certain species of mosquito have been detected as the special agents in the transmission of fever and the dread sleeping sickness, so the house-fly may well be the vehicle of other forms of disease. It is an unclean creature, and ought rightly to excite as much repulsion as those insects which are regularly classed as vermin.

XLIX

Does anybody wish to analyse Herbert Spencer's definition of instinct as compound reflex action, let him take note of the behaviour of grown men and women on the sudden appearance of a wasp. It is enough sometimes to throw a whole breakfast-table into agitation, although, were reason as swift and automatic as instinct, it would be obvious to all the company that the insect harboured no more malevolent intent than a sip at the strawberry jam. After all, most of us have had experience of the sting of a wasp or a bee, but not one person in a hundred thousand of the inhabitants of these islands has suffered from the bite of a snake. Yet of all the impulses of human nature none is less under immediate control than the instinctive shrinking, amounting to positive dread, caused by the sudden appearance of a snake. Which of us can declare honestly that the sight of an adder in his path raises no stronger sense of repulsion than would a frog or a lizard? Just so the high-bred hunter will face the most formidable 'oxer' or the densest 'bulfinch' hedge without changing his stride, and yet will

jump nearly out of his skin with terror at the flutter of a bird in the wayside fence. We may recognise heredity in these traits. As the primitive horse learned to suspect, by the rustle of leaves and grass, the presence of some lurking beast of prey, so primitive man acquired an indelible dread and horror of every form of serpent and stinging insect, and the ancestral impulse of avoidance or flight takes effect before the control of reason and experience can be brought into play. You may test this any day in early summer. Having found a tomtit's or wren's nest, and ascertained that the bird is sitting on her eggs, take a friend and ask him to put in a finger to count the eggs. An angry hiss will be uttered by the little mother—a note reserved for moments of imminent peril—and your friend, unless he is better instructed than most people, and prepared for that result, will snatch his hand away in a momentary spasm of dread. Herein is a double example of congenital instinct. Compound reflex action in the bird makes it hiss involuntarily, and causes the man to avoid the danger suggested by the hiss, which is immemorially associated with the presence of a serpent.

This train of thought was started by a little incident in my garden one morning lately—August 15. I was planting a consignment of cyclamens from Italy, when a winged insect like a gigantic wasp swooped straight for me and passed close to my ear. I gave a convulsive start, and candidly admit to a momentary sensation of terror. Next moment reason reasserted itself, and recognising the creature, not as a true wasp or hornet, but as one of the most interesting of British insects, the yellow wood-wasp (*Sirex gigas*), I knocked it down with my cap and

carried it into the house, setting it free again after examining its beauties.

Give a dog a bad name—call a stingless fly a wasp—and you deprive it of all title to mercy. *Sirex* is not a wasp, as I have said, but member of a separate family of large insects, two species of which are known, but are far from common, in this country, though they abound in the pine forests of Germany. My captive was a newly-hatched female, with four glittering, diaphanous wings, wearing the characteristic yellow and black livery of the wasp. The following particulars may help to identify the creature: body and head black, with a conspicuous yellow patch behind each eye; the first two and last three segments of the abdomen bright yellow, the remainder black; legs and antennæ bright yellow. The total length of the animal is not less than one inch and a half. Altogether a brilliant, showy fly; but what adds to its formidable appearance is a long, shining black weapon proceeding from the under surface of the fore-part of the body, and projecting far beyond the extremity of the tail, or what may be unscientifically termed the tail. I have called it a weapon, for that is what its appearance suggests—a powerful sting out of all reasonable proportion to the size of the insect. It is no weapon, however, but a domestic implement of a very remarkable character. It is an auger or borer, used to deposit eggs in solid timber, chiefly of the coniferous kind. The parent insect chooses wood neither vigorous nor rotten; apparently the sap or resin of a fir in full growth does not suit the young grub, but a moribund tree or a freshly-felled one answers every purpose. The egg having been deposited at a depth of about three-quarters or half an inch in the timber, hatches

presently into a maggot, which spends probably the next two years in burrowing and eating a gallery, ever widening as the larva grows, and emerges ultimately a full-fledged insect. How long it lives as a maggot, and how many weeks or months it spends in the chrysalis stage, has not been ascertained, for it is obviously difficult to follow the proceedings of a creature which inhabits solid timber; but some exceedingly interesting details may be gathered of its invisible movements. Fabre has shown that, while feeding, the grub always gnaws its way parallel with the wood-fibres—that is, in a direction parallel with the longitudinal axis of the tree. But when it has completed its larval and pupal stages, and obeys the impulse to get to the open air, it does not travel back along the gallery which it has formed. That would have to be scooped out afresh, for the bore of the tunnel has always been increasing as the grub grew. Acting upon some inscrutable intelligence, the perfect insect cuts a new road at right angles to the old one, and therefore across the grain of the wood, leading the shortest way to the outside. We creatures of grosser sense, who so easily lose our way in a London fog, may well wonder what is the faculty by which this fly, fully equipped for flight and freedom, yet which has never seen the light of day, can steer its way to sunshine through the darkness and solid timber in which it has spent all its life.

One would think that the young *Sirex* was pretty secure from molestation while pursuing its way through the heart of a fir-tree, but nature is very impartial in providing every living creature with its special enemy, and has not neglected the wood-wasp in that respect. Its flight is marked by a large species of ichneumon fly

(*Rhyssa persuasoria*), one of that cruel race of which many deposit their eggs in the living bodies of other creatures. This animal is provided with a borer or ovipositor even longer than that of the wood-wasp, with which it drives a shaft into the tunnel of its prey, slips in an egg which hatches speedily into a voracious maggot, and this attacks the grub of *Sirex* and enters its body, which it devours at leisure. Such, at least, is the gruesome history which the German entomologist Erne had the patience to elucidate; and most people will be content to take it on trust, for to check minute observations like these demands more time and labour than they can well afford.

The borer or ovipositor, which plays such an important part in the domestic economy of both *Sirex* and *Rhyssa*, is a very remarkable instrument. In both insects the general plan is the same—namely, a pair of long sheaths of horny material, enclosing a rigid tube. In the tube of the wood-wasp are enclosed two delicate blades, serrated near the point, which are rapidly vibrated when in action, and pierce the solid wood with a facility which is truly astonishing. Sometimes this borer is driven in so deep that the creature cannot withdraw it, and perishes.

By a singular coincidence, on the very same day on which I captured the wood-wasp in my own garden—the first that I had ever had an opportunity of examining in Scotland—I drove over to a place some fifteen miles distant. A young lady of the house, who took me to see her flower-borders, paused as we passed under a rustic arch made of rough larch poles, and showed me the dead body of a female *Sirex*, the duplicate of the one I had

handled in the morning, suspended by its borer, which was firmly driven into the hard larch.

It is uncertain how long is the interval between the deposition of the egg and the emergence of the perfect insect from its tunnel, but it probably amounts to two or three years, or even more. There is an instance on record of a house being built in this country, and fitted with timber from Canada. It had been inhabited for some time, when the inmates were suddenly terrified by the appearance of many large hornet-like creatures. These were a species of *Sirex*, and had already done their worst, for this fly is harmless to human beings.

L

In a former series of these notes I have described the Galton whistle,¹ a delicate instrument whereby the sensibility of the human ear to high notes may be tested, the varying range possessed by individuals ascertained, and compared with that enjoyed by some of the lower animals. As to the sense of touch, we anglers hug the assurance that the pain inflicted upon a fish by the hook is very trifling; indeed, there is plenty of evidence to prove that the suffering caused by the mere wound is nothing to the terror which impels a fish to what we grimly term 'play.' Is not one of the most treasured relics of a misspent life a certain double-hooked 'Childers,' which a salmon in the North Tyne carried away from me on October 6, 1873? I told the late Duke of Northumberland, who was fishing half a mile above me, that I had been broken by a good twenty-

¹ *Memories of the Months*, Third Series, p. 199.

pounder, little thinking how soon I should be convicted of exaggeration. Next day there was a small, dirty flood, and we did not fish. On the third day we began fishing in the same relative positions as on the first, and the first fish landed by the Duke had my fly sticking in its breast. The inexorable steelyard brought my twenty pounder down to seventeen pounds; but I mounted the fly again and killed a couple of salmon with it that afternoon.

Far more conclusive than this incident is the following which a friend sends me—

‘Last week, while fishing the Dee, I killed a fish¹ which had a phantom minnow in the centre of its mouth. One set of hooks—a triangle—was fixed in the back of the tongue; the others outside, near the eye. The minnow was just far enough in to enable the fish to shut its mouth, the gut having broken at the swivel. Notwithstanding this mouthful, the fish took my minnow, a natural one. It turned out that the phantom was one which Colonel —— had lost in a fish four days previously in the same pool, about two hundred yards lower down. The fish weighed 7 lb.’

Note that whereas there is no authentic record of food, or traces of food, being found in spring salmon taken in fresh water, hunger cannot have impelled this fish to take the second minnow. The only conclusion to be drawn is that its predacious or pugnacious habit was too strong to be overcome by hooks fastened into its tongue and face.

As for the other senses of animals, it is easy to recognise the superior powers of vision possessed by many predacious species. The sense of taste is more difficult to test; but we may assume, I think, that in herbivorous

¹ It is hardly necessary to explain that, in Scottish fishing parlance, the only ‘fish’ is a salmon.

animals, at least, it is more discriminating than in the most accomplished *gourmet*. The faculty, for example, that enables the never-sufficiently-to-be-execrated rabbit to reject as indigestible the common yellow iris, and to devour every blade and flower of crocus, although these plants belong to the same family of *Iridææ*, must be peculiarly subtle.¹

As I lay in the heather last week, watching through the glass some deer browsing busily on grassy patches among last winter's snow, the thought occurred to me how exquisite must be the palatal sensation of such creatures when the sap begins to stir in the wan, tasteless herbage of winter.

Once in the same strath of Helmsdale, I received proof, had proof been wanting, how open-air creatures rely mainly for guidance upon the sense of smell, the sense which, of all others, civilisation has induced us to discard. Whether the olfactory nerves of human beings were ever of supreme importance to existence or safety, may be open to doubt; certain it is that they are affected now only by relatively powerful odours. If, at any former period, men employed them for the purpose of recognising their relatives, or distinguishing between friend and foe, political or otherwise, they have quite ceased to do so.² In police cases, for instance, a witness may testify

¹ This reminds me of the amount of resentment, not to say execration, which I have incurred by publishing a list of rabbit-proof plants (*Memories of the Months*, Second Series, p. 293). I can only plead in extenuation that they are plants which I have been able to grow unprotected among many rabbits. I therefore reckon them to be reasonably rabbit-proof; but it cannot be too well borne in mind that these evil-minded rodents will attack and destroy almost any newly-planted herb or shrub, even if they cannot eat it. They seem to sample it thoroughly.

² I am informed by Dr. Augustine Henry, who has spent many years

to having heard, felt, or seen a prisoner; but when was a criminal convicted because somebody recognised his aroma?

With wild, and even with domesticated animals, it is quite different. Their nostrils remain vitally important channels of guidance, warning, recognition, and general information. In the case in point, a Cheviot lamb had fallen into the river and could not get out by reason of a steep, overhanging bank. A passing angler rescued the shivering creature from its plight, and it staggered away, bleating piteously for its dam. It found her without much difficulty, and immediately applied to the natural source of that refreshment whereof it stood in sore need; but the mother sheep, sniffing disdainfully at the dripping little wretch, pushed it off, refusing to recognise it. The shepherd happening to come up at the moment, the angler asked the cause of the dam's unnatural behaviour.

'Oh,' said he, 'the bit beastie's been in the watter, ye see, and the ewe canna smell it. She'll tak it back as soon as it's dry.'

And so it turned out. A few minutes in the keen March wind served to dry the short fleece; the natural odour returned; mother and child were reconciled at once, and celebrated the occasion with much tail-wriggling and eager pokes on the prodigal's part and patient hospitality on the part of the parent. Sheep can hear and see very well, yet neither the features nor voice of her offspring enabled this Cheviot ewe to

in Central and Western China, that the natives of those regions, a fine race, not only never use milk as food, but regard with some disgust those who do so. They detect and dislike the odour of it in Europeans, who, they say, smell of the cow.

recognise it; it required the familiar smell to carry conviction.

Some naturalists incline, without sufficient reason me-thinks, to postulate a sixth sense as guiding animals in their seasonal migration. Birds and fishes are the migrants with which we are most familiar, but Mr. Eagle Clarke has opened a new field of speculation in respect to the movements of winged insects. He spent thirty-one days during the ungenial autumn of 1903 on the Kentish Knock lightship for the special purpose of studying bird-migration. To his great surprise he found that between 8.45 P.M. and midnight on September 22 the lantern was surrounded by numbers of flying insects. Among them were several painted-lady butterflies (*Van-essa cardui*), by no means a nocturnal creature, but one which, it may be remembered, was unusually plentiful in England during that autumn. Now the nearest point of land to the lightship is the Naze, twenty-one miles off. If these insects came from England, they must have flown against an easterly breeze blowing at the time. The nearest land to windward of the lightship are parts of the French and Belgian coasts, respectively forty-eight and fifty-six miles distant.

Mr. Clarke observed flights of these delicate insects at intervals until September 28. Was this migration fortuitous or deliberate? If it was involuntary, we might expect to find Irish butterflies blown out upon the Atlantic. At all events, the nocturnal movement of companies of butterflies is a phenomenon not previously recorded.

LI

A memorable summer, this of 1904, whereof wisecracks should take account, were it only for the general rout, capsize, and confutation of confident forecasts. Not forecast in strict meteorological sense; ten per cent. of that must continue to miscarry among us islanders until our Weather Bureau gets into regular wireless touch with mid-Atlantic; but forecast of another kind, founded on thoughtful observation of many bygone summers.

In this wise: which of us who busy ourselves with green things of the earth was not ready to predict—nay, did not roundly affirm—that after the dripping sunless summer of 1903 would follow a season of famine in flowers on shrub and tree? If there was one point on which cultivators were agreed, it was that well-ripened growth was the chief essential to floral abundance, and what wood could have ripened fairly under the cold, sloppy skies of 3 Edward VII.? In effect, however, the growth of 1903, be it ripe or raw, has burst into such profusion of blossom as the oldest gardener in the land hath not seen surpassed. The summer display in woodland, hedgerow, and garden has been something to date from; woe unto those who have had to spend the shining months wrangling over Publicans' Compensation and Immigrant Aliens! for it may be they shall never see the like again.

Rhododendrons, of course; but we are overdone with rhododendrons of the baser sort. The common *R. ponticum* has been allowed to sprawl over too much good ground, ousting or throttling delicate native under-

growth to a deplorable extent. Nurserymen with heavy stocks recommend it for game cover. It is the worst thing in the world for that purpose, harbouring nothing in its dense tangle but rabbits, which cannot be beaten out of it.

Hybrid varieties are in deserved favour, though care should be taken to choose only the most distinct of these. 'Pink Pearl' has been resuscitated as a novelty, though it originated fifty years ago in the seed-bed of Peter Lawson of Edinburgh. That enthusiastic cultivator raised a peculiarly fine strain of hybrids, among others being 'George Cunningham,' an exquisite white flower, closely spotted with very dark maroon—practically black—reminding one of a fine engraving. It is not in the market now, I believe, but I am doing my best to propagate it from a couple of bushes which I have had for thirty years. Well, when Peter Lawson's stock was sold, many good things were scattered, some beyond recall; others, like 'Pink Pearl,' to pass into the hands of sagacious tradesmen, and to take the gardening world by storm.

But finer than any hybrids are the natural species from the Himalayas and China. These possess a peculiar harmony between the hue and texture of leaf and blossom which hybrids—'nature's bastards,' as Perdita called them—cannot rival. Several of them are perfectly hardy in all parts of our country, provided they are grown in the shelter and partial shade of an open wood; nearly all succeed, under similar conditions, within influence of the western seaboard; yet how seldom one sees them. Ireland has many attractions for the tourist; but, had she nothing else to offer, it were worth a journey to County

Wicklow only to see a bush of *Rhododendron Falconeri* at Kilmacurragh, some thirty feet high, with great leathery leaves a foot long, their under surfaces russet like *peau-de-suède*, and hundreds of trusses of creamy flowers.

One need not go so far as Ireland. Last spring I spent a morning, never to be forgotten, in a wood near Holkham in Norfolk. Originally all oak, it had grown for a century or more when it was heavily thinned thirty or forty years ago. Then the wind got in and made some wide clearings, which were planted up with American and Asiatic conifers, and all along the open floor were dotted Sikkim rhododendrons. These have developed their true habit, as they cannot do on bare lawns. Great tawny stems, loose-branching, climb among the oaks; wherever the sun strikes them, they burst into foliage of glossy myrtle green and pour forth cataracts of flower, often deliciously fragrant. Such an effect is not wrought in a day or a decade; but neither was Rome, nor anything else that is worth having. Half a lifetime is not too long to wait for the reward of seeing such a woodland as this in the spring sunshine, with all its English verdure and flower-carpet as a setting for curtains of blossom, five-and-twenty feet high.

Among the hardier species I would commend *Barbatum* and *Thomsoni*, with scarlet flowers, the former in March, the latter in May; *Shilsoni*, a hybrid between these two; *Smirnowi*, a free flowerer when young, purple, in April; *Aucklandi*, with white flowers and rosy bark; *Campanulatum*, lilac flowering in April; *Falconeri*, noblest of all in foliage, except *Argenteum*, which only thrives in the mildest districts; *Hodgsoni*, with rose-

coloured blooms in May and June, and *Cinnabarinum*, which bears orange and red tubular flowers in May and June. All these are worth growing for their foliage alone; but to produce this in perfection they must be liberally mulched in alternate seasons with some rich compost. Nothing is more acceptable to their constitution than brewer's draff.

Among the later and worthier additions to our shrublands are the Australasian daisy-bushes, named *Olearia*. One of these, *O. Haastii*, has become common, and is notable as one of the very few evergreens which relish, or at least resist, the abominable climate of London; but some of the best are known only to the elect. One of the grandest is *O. macrodonta*, a shrub of considerable stature—fifteen feet or so—with evergreen leaves on the plan of a holly, and liberal with flower-trusses of a charming pearly tint.

No shrub responds more generously than the daisy-bushes to attention in pruning. The flowering sprays should be removed immediately the blossom is past. If seed is allowed to be formed, the crop is so enormous that it exhausts the plant, so that it can only produce a free display in alternate seasons. *Olearia Haastii* often seeds itself to death; but if the old flowering shoots are removed, plenty of young wood comes up to replace them.

These daisy-bushes belong to that vast natural order, the Composites, whereof the daisy may stand as the type. A vast order, indeed, exceeding every other in multitude, for it numbers some eight hundred genera and more than ten thousand distinct species, testifying by its success in every part of the world to the merits

of co-operation and advertisement. We have heard with our ears and our fathers have told us that flowers were designed for the double purpose of glorifying God and delighting man. Modern science shrugs contemptuous shoulders; the glory of God, it thinks, is able to take care of itself, and as for man, let him find what pleasure he may in flowers, but their primary purpose is to advertise the wares they produce for the attraction of insect customers. Of those plants which depend for the fertilisation of their seeds upon the visits of insects, that plant will flourish on the earth which can attract insects most surely. Shall we have great flaming posters, comparatively few in number, like the *Allamanda* and the *Romneya*, or swarms of little paragraphs, individually inconspicuous? The Composites have adopted, or been assigned, the system of small and multitudinous advertisement; but whereas these might be overlooked if they were scattered singly among the leaves, the plant ensures attention by crowding all the advertisements together at the top of the stem. That is the plan of the thistles, dandelions, tansy, and many others, but the majority of Composites have carried it much further. Take the head of a sunflower or a daisy—the disc of each is made up of hundreds of perfect florets crowded into close company. Round the circumference of this disc are ranged other florets which have converted themselves into mere flags, generally of a different colour to the central company. Thus the brown disc of the sunflower is set round with golden rays, the yellow disc of the daisy with white and crimson-tipped ones, the yellow of the aster with violet rays, and so on. These ray-florets have sacrificed their sex in the interest of the community: they contain

neither honey nor pollen; they put all their energy into display, whereby passing insects may be attracted to the sweets stored in the fertile florets within the pale.

A thorough-going social system this, but as different from socialism as may be, for each class of floret has its separate functions with unequal share in the reward.

The abundance and variety of exotic plants now at the amateur's command are so bewildering, that it is well to call attention only to such as are conspicuously better of their kind. Of brambles there are many in cultivation; among the red flowering ones I am best pleased with *Rubus nobilis*, a gift from Mr. Moore of the Botanic Gardens, Glasnevin. It is like, but superior to, *R. odoratus*, bearing a long succession of rose-coloured flowers with white anthers. For a free-growing wall-cover, commend me to *Solanum crispum*, which will reward you for giving it a south aspect by sending out shoots six feet long in a single season, with a perfect cascade of lilac and yellow blossom.

Perhaps the loveliest exotic in the summer shubbery is *Andromeda* or, as we are now told to call it, *Zenobia speciosa pulverulentissima*. Don't be deterred by this preposterous name, but lodge it in peaty soil and give it support in youth of some half-rotten roots and branches; so shall you some day, surveying its silvery foliage and garlands of pearly flowers, bless me for bringing it to your notice. And if your lot be cast in the north country, and a wandering spray of *Tropæolum speciosum* should wind its carmine blossoms among the others, you may rest satisfied: you have attained the most exquisite effect of which cultivated nature is capable.

To touch upon the shrubby species of *Spiræa* would

lead me further than most readers would care to follow. It is difficult to go wrong with any of them. But a word in season about the herbaceous kinds may serve a useful turn. *Spiræa palmata* will be avoided by the fastidious, for its crimson flowers are in every garden, and the hue is not of the choicest. The variety called *elegans* is far better, of a delicate roseate tint; but the American Queen-of-the-Prairies (*S. lobata* or *venusta*) is more refined and is seldom seen. *S. rivularis* is a fraud; but *S. gigantea* is splendid in a moist border, like our own meadowsweet, eight feet high.

September

LII

WHEREAS there is no creature on God's earth so tenacious of *a priori* theory as the practical angler, I shall not live to see the belief exploded that the salmon disease is caused by overcrowding in fresh water. During last season I was the luckless victim of a votary of that creed. I was invited to fish in an excellent little river on the west coast, one that, under favourable conditions of wind and sky, was wont to yield very heavy bags of salmon and sea-trout to the fly-fisher. I accepted the invitation eagerly, and set out confident of something good, seeing that it was an ideal day for that somewhat leisurely stream, which abounds in long, still reaches between steep clay banks. The clouds were low and the wind was high; the surface of the pools was ruffled in the most enchanting manner, and frequent sweeping showers but added to the charm. I would not have altered a circumstance of weather or water an I could; which was well, for of course I could not an I would.

Well, I set to work with a pretty little silk-bodied jewel of a fly from the Irish Erne. When the first hour had passed without result, I yielded to that vain observance which I have so often derided secretly in others—I changed the fly. Two hours more; still nothing was in the bag but three or four small sea-trout, and not a 'fish'

had I stirred. Had this befallen another angler, I should have drawn conclusions unfavourable to his skill, for it is a finer art to take fish in a small river than in a great one. But I felt that I had made no blunders: yet was it almost incredible that the water held no fish.

Well, to make a short story of a long—a very long day—the solitary result of nine hours' hard work was one small salmon of 7 lb. weight; and not another was I conscious of moving in three miles of what used to be most productive water.

The scales fell from my eyes after dinner that night when my host told me that he had taken precautions against a visitation of salmon disease.

'What made you fear that?' I inquired.

'Oh,' said he, 'there were far too many fish in the water, and I was told that we were sure to have the disease; so I have been netting it regularly.'

A cold shudder shook me. Nets in that sweet little river, hitherto sacred to the gentle craft! sure the annals of baby-farming could reveal nothing more blood-curdling.

'O—o—oh!' quoth I, 'have you netted it lately?'

'We had the nets in last Saturday,' he replied.

'Did you get much?' I asked in quavering tones.

'We did fairly well,' said he. 'We took out a hundred and eighty-six salmon and grilse.'

There was nothing more to be said. Nothing that I could have said would have shown my friend the measure of his error. To him the success of his proceeding was clear; he had worked his diabolical nets—that was the cause: there was no disease—that was the effect. It reminded me of the evidence of a Scottish witness before a select committee on the salmon laws. Asked by the

chairman to explain his views upon the general question, he cast a deliberate glance round the committee, and cleared the ground by the following indisputable statement—

‘My lords and gentlemen: it’s a weel kent fac’, in oor country, that whaur there’s nae water there can be nae fush.’

So my friend could point triumphantly to the ‘fac’, that where there were no salmon there could be no salmon disease.

LIII

Among the characteristics of the remarkable summer (1905) now drawing to a close must be **Mush-** noted the extraordinary abundance of mush- **rooms** rooms, the most capricious of crops. Morning after morning, lawns and pastures in all parts of the country are freshly studded with gleaming hemispheres, covered with material like white kid, which screens the delicate rosy gills from sun and dew. The English name ‘mushroom’ has been appropriated exclusively to the delicious *Agaricus campestris*, and to its near relative *A. arvensis*, known as the horse mushroom, quite as excellent in a young state as the other. But whereas both these species only grow in sound land and sweet pasture, the name is far from appropriate to them, being a corruption of the Old French *mouscheron*, *mousseron*, from *mousse*, moss, signifying toadstools in general. In Middle English the term was *muscheron*, glossed in the *Promptorium Parvulorum*, a vocabulary published in 1440, as ‘toodys (toad’s) hatte, *boletus*, *fungus*.’ The field mushroom does not like moss.

The aforesaid horse mushroom is the species most commonly offered for sale in London, except, of course, those from artificial beds. It is easily known from the field mushroom by the gills, which, when fresh, are pallid, though they turn dark brown like the others after being gathered some time. As for mushrooms cultivated in the dark, on beds of horse-manure, I will never eat one if I know it. Let alone the flavour, which is far inferior to the wild article, they are said to be less digestible than fresh mushrooms from the field. Besides, the material in which they are grown is enough to condemn them.

LIV

A correspondence under the above heading has been
Can Fishes started in the *Field* newspaper, founded upon
hear? a paper contributed by Professor Körner, director of the Ear Hospital at Rostock, to a scientific periodical in Berlin. The same question has often been hotly debated among anglers, and ichthyologists have recognised a certain apparatus, supposed to be the organ of hearing, in every kind of fish except the lowest of all, the lancelet. Haeckel refused this curious creature (*Brachistoma lanceolatum*) a place among the fishes. It has colourless blood and no brain, wherefore he placed it in a branch by itself, named *Acrania*, or brainless animals; but with less apparent reason he refused to class the *Cyclostomata* or lampreys as fishes. Roughly speaking, what has been regarded hitherto as the hearing organ of fishes with bony skeletons, such as perch, trout, carp, etc., presents neither drum nor external orifice, but consists of a labyrinth within the

cranial cavity and a sac or sacs containing bony concretions termed *otoliths*. This apparatus in the herring, carp, perch, and other fishes is connected with the air-bladder by more or less complicated processes. In 1851 or thereabouts it was discovered that the internal ear of all mammals is furnished with a special mechanism, known as the organs of Corti, supposed to be indispensable to the transmission to the brain of those vibrations which cause the sensation of sound. Now, whereas fishes are the only vertebrate animals destitute of the organs of Corti, Professor Körner argues that fishes must be deaf. Nature, says he, is strictly economical in equipping her creatures for the battle of life; of what use, he asks, would ears be to fishes which exist in a world of silence? None; therefore Nature has not wasted ears upon them. The pike makes no sound in darting upon the trout; no warning footfall tells the herring of the approaching hake; where there is nothing to hear, there is no need for listening.

Is there not too much assumed in this reasoning? A body passing swiftly through water makes no sound audible to human ears, but there can be no doubt that certain vibrations to which human ears are insensible cause the sensation of sound in the brain of other animals. For it should be remembered that objective sound has no existence. The vibration of the conducting medium, be it air or water, must be conveyed to the sensorium before sound takes place. Testing the hearing of some friends two or three days ago with a Galton whistle, I found one who was insensible to the note produced by 5000 vibrations per second. His hearing for ordinary purposes is perfectly normal, and he enjoys music, but he has never

heard the call of a partridge nor the shrill of a cicada. For him such sounds do not exist. Two others present when I made the experiment could hear the note created by 35,000 vibrations per second. I myself am sensible of no sound higher than that caused by 12,000 vibrations; but then my ears have been in active service for threescore years.

Seeing that there is such wide variation in the sensibility of human ears, it seems rash to set a limit upon the sounds of which the ears of other animals may be sensible. For all we know, or can know, the rush of a shoal of mackerel may be as audible in submarine circles as the sound of wings in a flight of wildfowl in aerial regions; nor would it be safe, I think, to affirm that the auditory functions of fishes are performed only through that which appears to be a specialised auditory chamber. The vibrations of such a dense medium as water may be conveyed to the brain through other channels. At all events, this matter of the hearing powers of fish seems to be one in which the researches of the laboratory and the museum may be checked with advantage by careful observation of the behaviour of living animals in their natural haunts.

Certain observations of my own have convinced me that fishes hear—that is, are sensible of the vibrations causing sound—be their auditory apparatus what it may.

First, as to fresh-water fishes. In the month of October 1873 I spent a long day painting on the shore of Loch Ken in Galloway. The weather was typical of St. Luke's summer at its best, perfectly calm and bright, with just that refreshing tinge of sharpness in the air to distinguish the season from the lassitude of July. My easel was set up close to the water-edge, and the shallows were crowded

with the fry of perch, cruising about in pursuit of microscopic prey. Towards afternoon a shooting-party appeared in a large turnip-field fully half a mile away; nearer three-quarters of a mile, if memory serves me. The sport was not brisk; shots rang out at irregular intervals of two to five minutes, clearly heard in the still air. At every report the little fish darted away from the margin into the deeper water, drawing back into the shallows until the next shot started them off again. There could be no possible mistake; it was the sound of the guns that disturbed them.

Next as to marine fishes. At Logan, the immemorial home of the M'Doualls, formerly Celtic lords of Galloway, there is a curious fish-pond, formed in a circular recess, partly natural, partly artificial, in the sea-cliff. It is screened from the sea by a natural wall of rock, through which a tunnel, protected by a grating, admits the tide to fill a basin about thirty feet in breadth and half as much in depth. This basin is kept stored with sea fish caught on hand lines, and here they are regularly fed for the supply of the table, becoming much firmer in flesh and superior in flavour to those which have to hunt for a living in the open sea. Now, if you approach this pond stealthily, and look over the enclosing wall, you will see nothing but the deep green pool, with no sign of life. But let the attendant unlock the door of the enclosure, no sooner does his footfall sound upon the wooden stair leading down to the water-edge than the pool becomes troubled. Great tawny cod rise from the depths, and coal-fish (locally called *saithe*) dart hither and thither, lashing the surface into spray. They know what to expect, and they get it in

the shape of liberal handfuls of limpets and mussels. Formerly, a wooden clapper used to be sounded to summon them, but that was merely ceremonial; the sound of a foot upon the stairs is quite enough. Some may suspect that the fish *see* any one coming downstairs; but there is a singular circumstance which renders that improbable. The only fish which it has been found possible to keep in this pond are cod and coal-fish, which devour every other species that may be introduced. It invariably happens that the cod, accustomed to the green twilight of the deep sea, suffer from excess of light in their prison, and become blind if kept there long enough. You may notice that their eyes exhibit every stage of opacity, indicating all stages from mere dimness of vision to total blindness. The coal-fish, I fancy, do not suffer in the same way, being inhabitants of shallower water. Despite their blindness, the cod manage to take very good shots at the food provided, possibly being assisted by the sense of smell. Many of them feed freely out of the attendant's hands, or yours, for that matter, if you care to risk your fingers being sharply nipped. Many years ago, when I first knew the Logan fish-pond, the guardian of the fishes was an old woman, who always had one particular pet in the flock, an enormous cod, stone blind. Protected by a canvas apron, she used to lift this fish bodily into her lap, fill its maw with limpets, and launch it into the water again.

Those who are investigating the acoustic power of fishes ought not to neglect a visit to this unique fish-pond, which lends itself admirably to practical experiment.

LV

The wise man who first uttered the saying that 'familiarity breeds contempt' little imagined, perhaps, that his own words were to become ^{Heather} an illustration of the truth they expressed. Yet this has come to pass, for the phrase is threadbare through use of generations, and a threadbare saying commands scant respect. Yet is there no shrewder truth in any proverb than in the one above quoted, and it applies very closely to our appreciation of natural beauty. For instance, the glory of our Scottish hillsides in late summer is the flush of heather, yet not one person in a thousand of us ever thinks of inquiring into the source of that colour or the beautiful structure of the plant that produces it. We take it for granted; familiarity with the annual phenomenon has bred contempt, or at least indifference. On the other hand, how eagerly does the tourist search for a bit of white heather, and prize it when found—so eagerly that enterprising nurserymen have recently found it profitable to cultivate the white variety, of which thousands of bunches are hawked about the streets in August. So greatly has this traffic increased of late years that there seems good prospect of familiarity with these pallid blooms having its proverbial effect, and men will begin to realise the superior beauty of red heather. That it is really superior may easily be proved. One has only to imagine white to be the normal hue of heather-bloom, and to picture the moors and hillsides sheeted with a chill expanse of pallor. How grievously the landscape would suffer! How keenly would a stray tuft with rosy blossoms be hunted out and carried away!

Let us consider for a moment the structure of those myriad little blossoms which give to Scottish mountains their peculiar richness of colour. Most flowers which attract admiration by their colour do so by means of their corolla, as the rose, the violet, and the cowslip. In others, like the crocus, the lilies, and the iris, calyx and corolla combine to form the display; but in the common heather the calyx, coloured pink like the corolla, overlaps and conceals it. In the crimson bell-heather, the arrangement is exactly the reverse. The inflated corolla is very conspicuous, its four petals being represented by so many tiny lobes or teeth at the mouth, and the calyx shrinks into four attenuated sepals at the base of the flower.

We are accustomed to speak of the common heath or ling as 'Scottish heather'; but, in truth, that is rather an arrogant appropriation of what is, of all the great heath family, the most widely distributed species. It extends to the Arctic Circle over the whole of northern and central Europe; it invades Asia through the passes of the Ural; it is established in mid-Atlantic upon the Azores; and it is as much at home in Labrador as in Lanarkshire. I have seen it covering broad tracts of mountain in the south of Europe at a height of six thousand feet; it descends to the limit of high tide on the western coasts of Britain and Ireland, and it thrives wherever it can get a footing and clear head-room at all intermediate altitudes. To what does it owe the extraordinary constitution, enabling it to endure such a wide and varied range, unrivalled, in this respect, among European flowering plants? Chiefly, I imagine, because of its peculiar leaf structure. The leaves are exceedingly

small and short, closely crowded on the twigs, leathery and very thick in proportion to their superficial area. Against extreme cold they are protected by their small size and tough substance. Should mist or rime clog them, their small size and vertical position expose them fully to the action of the slightest breeze or the briefest sunshine, either of which suffices to free the minute stomata, whereby the leaves absorb carbonic acid gas from the air to combine with the mineral nutriment drawn up through the roots. Thus the foliage of heather renders the plant very patient alike of prolonged cold and wet, conditions peculiarly incident both in high latitudes and at high altitudes; but, strange to say, it is equally at home on arid sandy wastes exposed to scorching sun. Here, again, the thickness and small size of the leaves guard against too rapid evaporation, preserving the plant fresh and vigorous under conditions which would be fatal to more succulent or sensitive herbs. Hence the amazing preponderance of heather over almost every other plant across wide tracts of land. After nourishment and growth have been arrested by frost or dense mist or drought, heather is the first plant to regain activity; it gets a start of everything else, and never loses it. Only one thing it must have—plenty of free air. The fiercest wind-storms cannot hurt this wiry little shrub; but nothing must come between it and the blue sky and flying clouds. Shade of trees it cannot suffer, quickly giving up the ghost in dense forest, yielding place to brambles, ferns, and other undergrowth.

Many desirable varieties of the common heather have been introduced into commerce for the decoration of gardens. Among them all, perhaps *Alporti* is the most

distinct, owing to the deep rose of its blossom. Let me impart a wrinkle to those who would cultivate, not only this plant, but all the many species of dwarf heaths that thrive so easily in our borders—namely, the early-flowering Mediterranean heath (*Erica carnea*), beginning in February; the Cornish heath (*E. vagans*); the bell-heather (*E. cinerea*); and a new hybrid which Messrs. Smith of Darley Dale Nurseries have raised and named *Erica hybrida*. All these, immediately the flower has passed, should be trimmed over with the shears, the result being a vigorous young growth, which will bear abundant blossom in the following season. All tendency to woodiness or legginess is thereby checked, and the plants make beautiful close cushions of verdure when not in flower, greatly preferable to the rusty tint which overspreads untended plants. There is an old rhyme which runs—

‘ A swarm of bees in May
Is worth a load of hay ;
A swarm of bees in June
Is worth a silver spoon ;
But a swarm in July
Is not worth a fly.’

How comes it then, I used to wonder, that heather is famous as a honey producer, yet does not flower till August? It seems that the rhyme does not apply to moorland bees, for I am told by an expert bee-keeper that heather honey is all garnered in August. He assures me that this is accomplished so rapidly that a strong hive, given fine weather and an artificial start on prepared comb foundations, will build the cells, fill them and seal them, within very few days.

LVI

Seven miles or so south of Logan aforesaid, at the end of the long lean finger of land known as the Rhinns of Galloway, the Silurian rocks rear themselves into an eminence forming the southernmost point of Scotland. This is the Mull of Galloway, far seen by day across the Irish Channel and the Solway Firth, further still by night by reason of the powerful revolving light which guides the great stream of merchandise bound to and from the Clyde. It was here, as tradition tells, that a secret of great price was irrevocably lost. The Picts were once masters of all south-western Scotland, but they had to yield league after league to a more powerful and aggressive race, the Scots of Ireland. Now the Picts possessed the art of brewing good ale from heather, the recipe being preserved hereditarily in a single family of them, and known to members of that family alone. Whereas heather abounded exceedingly in Galloway, the Scots invaders, being good judges of ale and mighty consumers thereof, naturally coveted the means of converting so much good material into such a desirable beverage; but of the prisoners captured none was able to impart the secret, even had he been willing to purchase his life by betraying it to the enemy. Really, it was most tantalising.

In the end there happened six days of incessant slaughter, when Niall-of-the-Nine-Hostages, king-in-chief of Ireland, drove the Picts, fighting desperately, down the narrow promontory ending in the Mull of Galloway. Men, women, and children all perished, until there remained alive but four men—a father and three

sons—who took up a position guarding the isthmus uniting the Mull to the mainland, and not only defied capture, but inflicted considerable loss upon their assailants. They sustained this unequal conflict by means of the famous *biadh-nan-treun* or food of heroes, a kind of pemmican which enabled Pictish hunters to endure incredible privation. Day after day went by, and still these stout fellows held the passage—a narrow neck between two seas, called Tarbet to this day, which in the Gaelic means ‘drawboat,’ for here fisher-folk drag their boats across the isthmus to avoid the dangerous seas that churn about the Mull. Six times the sun rose from behind the Galloway uplands, and swung its course over the blue crests of Mona; six times it found its setting where the graceful cone of Slieve Donard starts aloft from the wavy outline of Erin. A seventh time it rose; the narrow strand was strewn with Scottish slain, for none might cross that way and live. But now the store of this stalwart little band was at low ebb. Hunger must soon accomplish what Scottish swords and javelins could not achieve. Yet had the victors strongest reason for preventing the death by starvation of their stubborn enemy, for well they knew that these four Picts were of the family with whom reposed the secret of the heather ale. They might have avoided the loss of some of their best fighters by simply sitting down and starving the fugitives to death, but they desired to take them alive. On this seventh day, then, they offered the Picts life and freedom if they would reveal the coveted secret.

‘Agreed!’ cried the father of the family, ‘on one condition. I must not live to witness the dishonour of my race. Take me and my two younger sons and slay us:

then shall my first-born, if he lists, purchase his life from you : for ye are the conquerors.'

So they took the aged Pict and his two younger sons and cut their throats. Then Niall-of-the-Nine-Hostages commanded Trost, the first-born, to fulfil his part in the bloody pact.

Now there was with Niall a certain Pictish arch-druid, Sionach the Fox, a traitor to his people. Trost told the king that the secret could not pass from his lips to any but one of his own race; only to Sionach the arch-druid could he reveal it. 'Three boons a man may ask from a king,' replied Niall, 'and no more. Thou hast had two—the death of thy father and brothers and thine own life. This third will I grant, but beware how you try me further! Sionach, we will withdraw a space. Keep your sword in hand. This man is unarmed; he cannot harm you.'

He motioned back the crowd; Sionach and Trost were left standing alone. Trost, with his hands behind his back, turned to walk along the brow, the druid following warily.

But not warily enough to baffle the Pictish hunter. Where the sea-cliff is steepest, the brink most abrupt, Trost turned like a flash, wrapped his sinewy arms round Sionach, and cried, as they fell into the abyss, 'Revenge! the secret dies!' There was a hissing splash in the deep green water beside the Black Rocks, a cry of baffled rage from the angry multitude, for in that circle of white foam, slowly drifting away on the tide, was buried for ever the secret of brewing heather ale.

Thirsty fisher-folk, when the summer sea reflects and doubles the power of the flaming sun, often turn their

eyes from the purple heather brae whereon the lighthouse stands to peer into the green depths where the lost secret lies; but no man, sage or simple, has yet hit upon the right recipe.

LVII

**The Return
of the
Eagles** In the mountain region constituting the great southern upland of Scotland, extending from upper Nithsdale to the valley of the Cree and to Dalmellington, eagles once abounded in inconvenient numbers. In a description of the parish of Minigaff, preserved in the Advocates' Library among the Macfarlane MSS., which were compiled in the eighteenth century, the following note appears about the Merrick, which is the highest Scottish hill south of Clyde and Forth, attaining the respectable altitude of 2750 feet: 'In the remote parts of this great mountain are very large Red deer; and about the top thereof that fine bird called the Mountain Partridge, or, by the commonalty, the Tarmachan, about the size of a Red cock, and in flesh much of the same nature; feeds, as that bird doth, on the seeds of the bullrush, and makes its protection in the chinks and hollow places of thick stones, from the insults of the eagles, which are in plenty, both the large gray and the black, about that mountain.'

A year ago it might have been written with truth that red deer, ptarmigan, and eagles were all extinct, leaving only their memories embalmed in place-names. Thus in Craignelder and Kilhilt may be recognised *creag-nan-eilte* and *coill eilte*, the crag and wood of the hinds; in Craigholly, *creag an choilleaich*, the crag of the grouse-

cock; and in Benyellary, a mountain of 2359 feet, next to the Merrick, *beann iolair*, the hill of the eagles. The Merrick and Benyellary are in the old forest of Buchan, where, in the thirteenth century, Comyn, Earl of Buchan, used to find solace in hunting the red deer. The pass into Ayrshire through this forest is still known as the Shalloch of Minnoch, Shalloch retaining the exact sound of the Gaelic *sealg*, the hunting-ground. One can almost fancy that the echoes of the earl's bugle still hang round the crags of Mulwharker—*meall adhairce* (aharky)—the hill of the hunting-horn. The tradition runs that the last red stag was slain on these hills by the minister of Kirkinner towards the close of the eighteenth century. The ptarmigan disappeared, as an aged hill shepherd informed me in my youth, in that notable year of drought, 1826, still remembered as 'the year o' the short corn'; but the eagles survived for long after that. The golden eagles last bred on Cairnsmore in 1835. The young birds were taken, and one remained in captivity at Cumloden till the great gale of 1839 destroyed its cage and the eagle escaped. I came not into existence until several years after that date, yet, strange to say, I have seen that bird, and it may be seen yet.

Its fate was a melancholy one. A packman, travelling the lonely road by Clatterinshaws to New Galloway, was startled by a shadow flung across his path. A great bird swung down from mid-air, and lighting in front of him, spread its wings, and opened a formidable beak. The packman, thinking he was attacked, up with his stick and felled the creature, which turned out to be the escaped prisoner from Cumloden, seeking food from the source it had been accustomed to receive it—namely, an un-

feathered biped. Its remains were preserved; its skin was stuffed, and may be seen at the present day in a glass case at Galloway House.

The white-tailed eagle remained longer in the district, the last eyrie having been built in 1862. A young bird taken in 1858 remained in a cage at Cairnsmore till May 1900, when it died at the ripe age of forty-two. This tends to throw some discredit on the Highland dogma—

‘Twice the life of a horse, once the age of a man ;
Twice the life of a man, once the life of a stag ;
Twice the life of a stag, once the life of an eagle.’

Now, I have said that a year ago red deer, ptarmigan, and eagles might be reckoned as extinct in Galloway; but that cannot be said now. The red deer are gone past recalling, though stags of a stature and weight unknown in Highland forests still roam in the enclosed hill about Garlies Castle in the valley of Penkiln. A spirited attempt is being made this year (1906) to restore ptarmigan to the tops which they used to inhabit. Large numbers of eggs have been brought from the Highlands, but it will be easily understood what difficulties beset the artificial incubation and rearing of such an exclusively alpine bird.

The eagles have returned of themselves. Last spring, seventy-one years since the last golden eagles were hatched in Minigaff, a pair of these noble birds sought out the hereditary haunt of their race and built an eyrie. The female laid but one egg (two is the regulation number), sat upon it for some weeks, but abandoned it, when the egg was found to be addled.

This incident is one of great interest to lovers of nature, which, says Horace, you may pitch out with a fork, but it will always return. Eagles, with only too

much reason, have been treated as foes of the human race; but they have increased in numbers in the Highlands during the last few years, owing to the protection extended to them in the deer forests. Nobody wishes to have them back in quantity, but the presence of a pair or two of this type of empire and freedom imparts dignity to a landscape, and agreeably stirs the imagination.

LVIII

A few days ago (1904), when one brought me a fine specimen, about four inches long, of that The Sea-
Mouse strange creature, the sea-mouse, dredged from the sandy bottom of Loch Ryan, I began to speculate darkly upon the significance of the generic name *Aphrodita* bestowed by Lamarck upon this lowly invertebrate. For it is no mouse, but a mere worm, of the class *Annelida*; an animal which, being still in a primitive stage of development, enjoys the enviable privilege of being able to replace any organ, even a head, of which it may be bereft by accident or assault. At first sight, no living creature is less suggestive of the Goddess of Love; its general outline being that of a gigantic wood-louse, and its structure but an oblong mass of integument and viscera. Yet is there a kind of grotesque fitness, after all, in the name *Aphrodita*, born of the sea-foam—*ἀφρός*—and if beauty of form be denied to this worm, there is compensation in its extraordinary loveliness of colour. The breathing apparatus, consisting of external *branchiæ* like silky bristles, arranged all along the sides of the animal, shine with a lustre as delicate as, and more brilliant than, a pigeon's neck.

What can be the purpose of this iridescence—this perennial rainbow in which the sea-mouse moves? It cannot be explained, like the gay plumage of birds and the fantastic head-gear of our fine ladies, as amatory machinery, stimulating the ardour of lovers; for the sea-mouse appears to be sightless, or, at best, to be sensible of no more than the difference of light and dark. Neither will it serve the teleologist as an instance of beauty provided for the delectation of man, inasmuch as the sea-mouse is ‘born to blush unseen,’ buried in the mud and sand of sea-bottoms. ‘They that go down to the sea in ships, these men see the works of the Lord and His wonders in the deep,’ and occasionally they bring up a sea-mouse in the trawl; but of landsmen, probably not one in half a million has derived pleasure from contemplating this puzzling creature—a pleasure like that experienced in the contemplation of refined jewellery or rich embroidery.

LIX

It has been for long disputed among ornithologists whether grebes and their near allies, the great
 Divers whether grebes and their near allies, the great
 and their northern black- and red-throated divers, assume
 Attitudes on land the erect attitude in which they are
 usually represented by artists and taxidermists. Mr. Abel Chapman, if I recollect aright, states in his charming volume on *Wild Norway* that he took a freshly-killed great northern diver and tried in vain to bring its legs into such a posture as would support the body in the erect attitude so familiar in puffins and guillemots. The joints, he says, would not bend to the requisite angle, whence he

argued that it was an anatomical impossibility for the living bird to stand in such a posture.

The late Lord Lilford had more opportunities than most men of sustained observation of the habits and attitudes of birds in his unrivalled aviary, and it is to be noted that in his beautiful *Figures of British Birds* (the best portrait-gallery of the British avifauna ever produced) Mr. Thorburn has carefully avoided representing the divers and grebes on dry land, with a single exception—the great crested grebe. In the plate of that species a pair of birds are depicted, one swimming, the other ashore, not erect, but crouching low with breast and belly on the sand.

Since the controversy was started, I have pretty constantly been on the watch to solve it, and have at last succeeded, at least to my own satisfaction. Owing to the wooded nature of most of the shores of the sanctuary lake, and the reed-girdle round the rest of it, I have never till yesterday (September 1904) managed to view the great crested grebes except when they were afloat. But last evening I caught sight of an erect object gleaming white on the shingle under a thicket of salallows. It was on the far shore, fully five hundred yards away, but the light was good, and the glass revealed the bird to be a grebe in the conventional attitude aforesaid, vigorously preening its plumage, as it is the practice of grebes to do more incessantly, I think, than almost any other kind of bird. It remained so until, wishing to get a nearer view, I approached it in a boat, when it dropped into the water and joined two young grebes that were disporting themselves not far off. As this question about the attitude of the *Colymbiformes* has been so hotly

discussed, it was well for me that I was not alone when the opportunity for deciding it happened. My observation was confirmed by one of my sons-in-law, who was with me.

While on the subject of grebes, one may note the misleading way in which the scientific title of these birds is often rendered. Even so careful a writer as Lord Lilford wrote of the sub-order as *Podicipidæ* and of the genus as *Podiceps*, which can only mean 'foot-headed' or 'foot-catching'—pretty good nonsense. Professor Newton has explained in his *Dictionary of Birds* (a compendium which no one should be without who takes the least interest in his feathered fellow-creatures) that the true names are *Podicipedidæ* and *Podicipes*, which, signifying creatures with feet on the *podex* or rump, is accurately descriptive of the peculiar structure of the race.

October

LX

PERHAPS it is 'when daffodils begin to peer' that flowers are most prized, harbingers of the wealth of **Autumnal** summer; yet the autumnal border may be so **Flowerbeds** furnished as to display a quiet glory not to be attained in spring. This cannot be secured without wise forethought, for it must be confessed that in these days, when everybody has a herbaceous border, the tendency to sameness is somewhat harassing, and the practice of cultivating coarse-growing perennials causes too many gardens to look weedy and overgrown in September. Neatness and order are indispensable to pleasing effect, yet repetition is a snare to be avoided. When many different species of flowers are grown together, as is usual in the herbaceous border, they should be carefully grouped so as to give an impression of spontaneity. For example, there is no more conspicuous flower at this season than the torch lily or red-hot poker, as it is unpoetically called—none more effective in lighting up the back row of a border. There are many species of different hues; one can scarcely go wrong with any of them. No more splendid effect can be wrought with flowers than that which is before my eyes as I write. A large clump of torch lilies, occupying a circular bed on a slope of well-kept lawn, has thrown up more than a hundred spikes of vivid scarlet and yellow.

Behind them is a dark wood; the effect when the sun strikes the lilies is almost dazzling, yet it has been attained by the simplest means. A dozen roots at ninepence apiece three years ago; the soil stirred annually to destroy weeds; a moderate allowance of manure each spring—and nature has looked after the rest. Whereas, elaborate design may make these bright flowers seem vulgar, as I noted the other day in a very grand garden indeed. Two wide borders stretched on either side of a broad gravelled walk, almost a promenade; clumps of torch lilies (*Tritoma* or *Kniphofia* is their name in nursery catalogues) had been set at regular intervals, alternating with *Helianthus*, *Coleus*, woundwort, and other showy things. Poor flowers! they were doing their best, but the monotony was depressing.

Skill and taste, however, in the cultivation and choice of hardy flowers is far more general than it was in the 'seventies, when Mr. William Robinson started his paper, *The Garden*, and began the revolution which has ended the mechanical 'bedding-out' universal at that time. Perhaps it may be useful to some readers to have a few of the choicer and more infrequent autumnal flowers brought to their notice, seeing that, as aforesaid, sameness is a vice to be avoided. Nobody can grow more than a tenth of the pretty things in cultivation; it is well, then, that your tenth should be different from that of your neighbours. It is well, also, to choose the best only of the multitude of species in each genus.

Taking the front rows first, where low-growing things are wanted, the *Colchicums*, or meadow saffrons, are very characteristic of the season. People generally call them autumn crocus, but they belong to the Lily family, whereas

the crocus is an Irid. Moreover, the colchicum contains in all its parts a very powerful alkaloid poison, which is used in medicine. There are about thirty species of *Colchicum* in cultivation, besides many species; but he who grows *C. speciosum*, the great rose-coloured kind from the Caucasus, and the white variety of *C. autumnale*, a native species, need not concern himself with the rest. But he must consult the idiosyncrasy of each. While the native *Colchicum* and its white variety revel in deep, cool soil, *C. speciosum* prefers a sun-baked soil, whence, incited by the autumn rains, it sends up profusion of tulip-like blossoms.

Visitors to Switzerland in autumn must be familiar with the countless flowers of the common *Colchicum* that deck the mountain pastures; but they will do well to leave them alone. I sat one evening beside a young lady at a *table d'hôte* in the Engadine. She complained of a violent headache, which she attributed to the sun. 'I venture to think,' quoth I, pointing to a bunch of colchicum flowers in the bosom of her dress, 'that the cause of your headache is not ninety-two millions of miles distant.' She threw the flowers away, and in a short time the head was all right.

True autumn crocuses there are also, many of them, but *Crocus speciosus* from Eastern Europe is by far the best of the bunch—a lovely thing with blue-violet blossoms and rich orange styles protruding. It is as easily grown as a spring crocus: yet one may go through a hundred gardens and never behold the glorious display of this plant with its crowded flowers expanded in the sunshine.

I have been puzzled for long to understand why

cyclamens are so seldom seen in British gardens. The autumn flowering *C. hederifolium*, or ivy-leaved sowbread, is as hardy as a buttercup. It is an exquisite little thing that never fails to send up a display of delicate pink or pure white flowers at this season. When the blossoms fade the stems curl up to nurse the seeds, and up comes beautiful marbled foliage, forming a close cushion over them through the winter. This plant seeds itself freely in light soils. The finest white-flowered cyclamen I possess came up twenty years ago, a chance seedling in a gravel walk. Why, then, have so many people to complain of failure in its cultivation? I think I have hit upon the reason. When the corms arrive from the growers they are dry and apparently lifeless. One side of the flattened sphere is smooth and convex: the other side is more or less rough, with a few scattered rootlets. Those who are unfamiliar with the plant not unnaturally suppose that the side of the tuber which shows roots ought to be planted lowest. The reverse is the case. In the cyclamen, leaves, flowers, and roots all proceed from the same side of the corm, which, if it is planted upside down, perishes. I blundered through many failures and losses before I discovered this simple truth.

So far, mention has been made only of natural species, unadulterated by the florist's meddlesome craft. Many lovers of flowers, myself among the number, share Perdita's dislike to the meddlesome hybridiser, and wish that there were some finality in the perpetual production of new varieties.

Perdita. Sir, the year growing ancient—
Not yet on summer's death, nor on the verge
Of trembling winter—the fairest flowers o' the season

Are our carnations and streak'd gilliflowers,
Which some call nature's bastards : of that kind
Our rustic garden's barren, and I care not
To get slips of them.

Polixenes. Wherefore, gentle maiden,
Do you neglect them ?

Per. For I have heard it said
There is an art which, in their piedness, shares
With great creating Nature.

Pol. Say there be ;
Yet Nature is made better by no mean,
But Nature makes that mean, so o'er that art,
Which, you say, adds to Nature, is an art
That Nature makes. You see, sweet maid, we marry
A gentler scion to the wildest stock,
And make conceive a bark of baser kind
By bud of nobler race : this is an art
Which does mend Nature—change it rather—but
The art itself is Nature.

Per. So it is.

Pol. Then make your garden rich in gilliflowers,
And do not call them bastards.

Per. I'll not put
The dibble in earth to set one slip of them ;
No more than, were I painted, I would wish
This youth should say 'twere well : and only therefore
Desire to breed by me.

Yet have these busy florists so multiplied varieties and increased the splendour of the *Gladiolus*, for instance, that it is hard to forgo their presence in the middle rows. The most striking novelty among them, perhaps, is 'Baron Hulot,' which bears a fine spike of large rich violet flowers, quite unlike anything hitherto seen ; but 'Princeps' has the largest flowers of any gladiolus, flaming scarlet in hue.

Of *Monbretia*, that fine South African bulb which is so easily naturalised on wood margins, the best variety is named 'Germania.' You need hardly grow any other; but you should secure half a dozen tubers of *Antholyza paniculata*, also from South Africa, resembling a *Monbretia* in its branching flower-stems, but superior to that plant in its broad, bright green foliage.

It is curious to note the difference in the behaviour of plants brought to the northern from the southern hemisphere. Some of them conform at once to our calendar, flowering in April and May, albeit these are autumn months in their native land; but others—such as the torch lilies above mentioned—being spring flowers south of the equator, become autumn flowers when brought to our northern land. It would be an interesting experiment to watch the result of growing a confirmed autumnal flower like the colchicum in Cape Colony, where our autumn is the African spring.

Of the speedwells there is a bewildering variety to choose from, both bushes and herbaceous plants. Of the latter, for autumn effect there is none to compare with *Veronica subsessilis*. Indeed it is the best of all the herbaceous speedwells, conspicuous by its sturdy habit, fine glossy foliage, and deep blue flower-spikes. Among the myriad autumnal asters I will only name two; he is rich who grows both in perfection. One is *Aster bessarabicus*, flowering rather late; the other is the lovely *Aster acris*, with clouds of soft mauve blossom throughout September, near which it is well, for sake of contrast, to plant the dyer's camomile (*Anthemis tinctoria*), a native plant with clear yellow blossoms in great profusion. For white, there is nothing to compare with the Japanese

anemone, 'Honorine Jobert.' Everybody has it now, because nobody who cares a pin's head for his garden can do without it, and it never looks untidy, as some free flowerers do unless carefully tended. Another good white, seldom seen, is the Japanese loosestrife (*Lysimachia ephemereum*—though why *ephemerum* I don't know, for it lasts six weeks in bloom).

Few of your neighbours have *Gaura Lindheimeri*, but they will soon beg for it if you set it going. It is a native of Texas, with long graceful sprays, set with rose and white blossoms from early August till the first sharp frost. It revels in a light soil, indifferent to sunshine or shade, and is useful for cutting. Even more prolonged than that of *Gaura* is the flowering season of the parrot lily (*Alstræmeria psittacina*), standing stiffly but daintily erect, and displaying a quaint mixture of crimson, green, and black. There are two kinds of the purple cone flower (*Echinacea purpurea* and *angustifolia*) well worth persevering with, even if you fail with them at first. Quiet, almost weird, in tone by day, the subdued rosy rays surrounding the sombre cone of the blossom glow with a singular radiance under gas or candle-light.

We have now reached the back row of the border, and have named only some of the choicest and least familiar ornaments for the front part. Here you will have at your disposal the perennial sunflowers, to be sparingly used, torch lilies, single hollyhocks, and chimney campanulas. Behind these may be ranged a selection from the choicest shrubs, of which mention may be made another day. The great herbaceous meadow-sweet (*Spiræa gigantea*) will tower above them all, and among them you may well admit the giant saxifrage (*Saxifraga peltata*), which,

although a spring flowerer, forms a grand filling for blank spaces with its huge circular leaves, turning brilliant red in autumn.

I had nearly included the great Californian poppy-wort, *Romneya Coulteri*, among tall things for the back of the border; but it is a thing of such singular delicacy combined with splendour that it ought to have space all to itself. Set it therefore in some secluded glade or beside some dignified bit of architecture, treat it generously in the matter of diet and sunshine, and you will be rewarded by a vision of loveliness such as the Frontispiece reflects a feeble simulacrum. And here I am at the end of my paper, without having named more than a tithe of the autumnal flowers which require only the application of taste, discretion, and a modicum of knowledge to yield a display that goes far to mitigate the pain of parting even with such a divine summer as that of 1905.

LXI

The vegetable kingdom presents problems, many of them not a whit less obscure than those of the animal world; and one of these has been brought forcibly to notice during the present year. Five-and-twenty years ago the number of British and Irish gardens to which hardy bamboos added their peculiar grace might have been counted on the fingers; nowadays it is seldom that well-tended pleasure-grounds are without some of these giant grasses. But the season of 1905 will be remembered as disastrous to the fond hopes of those who imagined that bamboos had come to stay. For many years they continued to increase in

The Riddle
of the
Bamboos

beauty, such species as *Phyllostachys Henonis* and *Arundinaria nobilis* tossing their plumes to a height of twenty or twenty-five feet, patient of every phase of our climate except wind, from which they must have reasonable shelter. Our complacency in possessing plants which lend such an Oriental aspect to woodland glades and lawn margins has received a sudden and sorrowful check. Simultaneously, in all parts of Europe where bamboos are grown, many species have flowered during the past summer. I presume the same has occurred in their native lands, because some plants of the black bamboo (*Phyllostachys nigra*) consigned to me direct from Japan in the autumn of 1904, measuring only two or three feet high, burst out into flower as copiously as those which have been established here for twenty years. Now the flowering of garden plants is not usually reckoned a calamity; but in the case of bamboos it is a peculiarly severe one, not because the flowers are far less beautiful than those of many of our commonest field grasses, but because they are the prelude of inevitable death of the whole plant. Imagine, therefore, my dismay when I found that a noble sheaf of *Phyllostachys Quilioi*, which has decorated a secluded nook in my garden for more than twenty years, had become last summer a mass of dingy inflorescence, and is now as dead as Queen Anne. It leaves a terrible blank, and certain it is that such aching voids will have to be deplored throughout the length and breadth of horticultural Europe.

This suicidal habit of most bamboos has been recorded by many botanists and travellers during the last hundred years. Whole forests of certain species have been known to disappear in India in a single season, to the manifest

inconvenience of the natives, who rely on the great canes for housebuilding and many other purposes. Many kinds of trees and plants flower, individually, only at long intervals; others, annuals and biennials, flower but once and die. But the periodicity of bamboos, apparently about thirty-three years, is independent of their age. Old plants and young, lofty and lowly, all obey the inscrutable mandate at the same moment, and, having complied therewith, perish. Attempts have been made, with partial success in a few cases, to save their lives by cutting down the culms as soon as they showed signs of flowering. In most instances the plant has resisted this, pushing up new culms in haste, and putting out new flowers, thereby incurring the death penalty.

So distinct is the beauty of bamboos that one would gladly enjoy it for thirty years or so, and have young plants ready to take the place of the old ones when the inevitable crisis arrived. Unluckily, one has no indication of the period to prepare for. A two-foot slip is just as sure to flower at the given period as a clump twenty feet high, and just as sure to perish.

LXII

Some good progress has been made lately in knowledge of the life-history of the salmon, a matter
The Riddle of the life-history of the salmon, a matter
of the which, being naturally difficult to trace, has
Salmon been unduly obscured by the prejudice and
 prepossession of anglers and net fishers, two classes peculiarly prone to *a priori* argument and suspicious of scientific process. The latest contributions to ascertained facts were described by Mr. W. L. Calderwood before the Royal Society of Edinburgh on July 13. The period of

growth specially dealt with was that from the time the salmon parr assumes silvery scales and disappears from the rivers, entering the sea, to be seen no more till it reappears as a grilse. Much difference of opinion has prevailed as to the length of time necessary to change the smolt—a creature five or six inches in length, weighing about one ounce—into a grilse, measuring perhaps twenty-four inches in length, and weighing four or five pounds. Hitherto the nearest approach to precise data was that made in the Stormontfield experiments half a century ago, when smolts were marked by certain mutilation of the fins. The report on these experiments pointed to the almost incredible conclusion that the transition from a one-ounce smolt to a four-pound grilse was effected in two or three months. But the method of marking adopted at Stormontfield was a very rude one. It consisted merely in cutting off the little adipose, or so-called ‘dead,’ fin, which is the distinctive badge of all the salmon tribe; and as this was the common plan resorted to by everybody who, for one reason or another, returned a salmon at any stage of growth to the water, it is obvious that no sound conclusion could be founded upon such slippery data. The system of marking instituted by the Scottish Fishery Board leaves no room for misinterpretation. A number is attached by silver wire to the dorsal fin of the fish, which number corresponds with that in the register giving the dimensions and date of liberation. Mr. Calderwood’s report is based upon the results of that operation up to date.

In the spring of 1905 six thousand five hundred smolts were marked in this manner under direction of the Tay Fisheries Company, of which Mr. P. D. Malloch, a

thoroughly trustworthy and experienced naturalist, is the manager. Not one of these six thousand five hundred fish was recaptured during that year, as would almost certainly have been the case had any of them returned to the river. The first of the silver marks came to hand on 1st June 1906, in the fin of a grilse weighing close on three pounds. One year in the salt water, with its abundant food-supply, had sufficed to increase the weight of this young salmon from one ounce to fifty-two ounces, the rate of increase being between four and five ounces a month.

Between June 1 and July 12 in the present year (1906) five grilse, marked as smolts in 1905, have been taken in the Tay, varying in weight from three to five pounds, whence the deduction, doubtless to be confirmed by future recaptures, is pretty clear that a grilse is a salmon not less than four years old, and possibly five or six. It is known that of the young fish spawned, say, in the autumn of 1902, some make their first journey to the sea in May and June 1904; others do not leave the river till the corresponding months in 1905. Whether one year in the sea is enough in all cases to fit the grilse for a return to the river is still uncertain. If some of the Tay smolts marked in 1905 should be recaptured as grilse in 1907, it will be apparent that more than a twelvemonth of sea-fare is required to build up the frame of the fish to a size which the angler deems worthy of his craft.

[Since the above paragraph was penned, convincing proof has been obtained that salmon do not always reappear in rivers as grilse, but sometimes spend that stage of their existence in the sea. Two fish marked as smolts in 1905 have been taken in the Tay nets in February 1907 as spring salmon weighing $9\frac{1}{2}$ and 8 lbs.].

LXIII

The enterprise of the great nurserymen has provided such a vast variety of trees, shrubs, and herbs for the adornment of our parks and gardens, great and small, public and private, that there is no excuse for the sameness which is visible in too many pleasure-grounds. It requires a little knowledge to discriminate in choice of plants, but that knowledge is not difficult to acquire, and is very pleasant in the getting. In the prevailing abundance, it is well to be resolute in refusing to harbour anything but the very best species. Messrs. James Veitch of Chelsea have probably done more than any other firm in Britain during the last hundred years to make us acquainted with the floral and sylvan beauties of foreign lands. It should not be forgotten by Scotsmen that this family, whose name is a household word in horticulture, are descended of an old Border stock, the Veitches of Tweedside, and that the name in its present form represents that of the Norman De Vesci, once a powerful baron on the Border, and one of the competitors for the crown of Scotland in 1298. Three years ago Mr. Wilson and Dr. Henry, whom Messrs. Veitch commissioned as plant collectors in China, returned to this country laden with good things, and, it must be added, others not so good. Among these were a number of new groundsels of giant stature, whereof if your gardening readers provide themselves with the fine orange *Senecio clivorum*, they may rest assured that they have the pick of the basket. The other new groundsels are only fit for the wild garden. There is another of that family, however, which has been longer in this country,

Messrs.
Veitch's
Novelties

yet is very seldom seen in private gardens—to wit, *Senecio Grayi*, a silvery-leaved shrub (the back of the sprays is like carved ivory), with abundant golden flowers. To those who have not yet acquired this treasure my advice is—do so without delay.

LXIV

It is an experiment of dubious wisdom to revisit in the afternoon of life scenes which one has not **Makerstoun** beheld since its sunny morning. Every landscape, be it not the Sahara or the ocean, must undergo change for better or worse in the course of forty years. Even if the change be not distressing, the visitor himself must be mournfully conscious that he views the scene from a very different standpoint. His outlook has parted with the glow of promise; well for him if it be not dimmed by the gloom of regret.

Some such thoughts as these were mine as I stood lately beside the Tweed at Makerstoun and gazed upon a scene which, unvisited since boyhood, had remained more vividly impressed on memory than most others. For it was here, in the race of the Clippers, that I raised my first Tweed salmon; and here I had come again, after forty years, as tremulously eager as any tyro for a contest with the king of fishes. In that interval it boots not to reckon how many days I have spent—wasted, some will say—on the bonny banks of Tweed, fishing almost every cast from Gladswood to Carham Dub; but never, since 1866, had it been my luck to wet a line at Makerstoun. None who know this water will dispute its claim to be the cream of Tweed angling. In her long journey from Corse Hill to the German Ocean, to quote quaint old

Dr. Pennecuik, 'Tweed runneth for the most part with a soft, yet trotting stream.' She spreads into momentary brawl under the Gateheugh, at the heel of enchanted Ercildoune, and there is a foaming jumble among the rocks of Craigover in the Mertoun water; but the general character of this sweet river is too gentle to satisfy the salmon-fisher, who revels chiefly in the rush and roar of a mountain torrent.

For a mile or so at Makerstoun Tweed assumes a Highland mien—first chafing round the sunken rocks at the Orchard Heads, then circling profound under the Dark Shore, before making a wild dash through the Clippers. Then she collects herself for a space, broadening out to form the Laird's Cast and Elshie, and sliding out of the expanse of the Red Stane to rush in fury through the Straik, where so many good fish have smashed their way to freedom, into the troubled Doors, the Nethern Heads, and Willie's Ower-fa', only regaining composure in the comparative calm of Killmouth. What a host of memories—the very classics of angling—do these names awaken!

There is good cause given for the troubling of the Tweed in its passage through the rocky defile of Makerstoun. Geologists will explain to you coldly that it is to be found in the intrusive trap rock, rising like a mighty wall through the Old Red Sandstone. Believe them not, unless you prefer dry fact to rich romance. The true origin of these rapids is as follows: Michael Scot of Balwearie, Wizard of the North, fell at issue with the monks of Melrose, who had marred some of his finest incantations by meddlesome exorcisms and holy water. To punish them, he determined to cut off their sunshine,

and set his familiar demon to pile up a mountain on the south of the monastery. The first scoop of the demon's shovel brought enough earth and rocks from the Cheviots to form one of the three existing peaks of Eildon; a second peak was added with the second scoop; but of the third shovelful he spilt half on the return trip, which satisfactorily accounts for the inferior size of Eildon's third cone, and also for the lone peak of Ruberslaw, representing the spilt material. The demon's carelessness saved their sunshine for the monks. Michael was very angry with the awkward imp, and rushed at him with a big stick. The imp fled to the river, embarked in his shovel, and shot downstream, with Michael after him in a boat. True, Thomas of Ercildoune also joined in the chase, together with some monks, eager to share the fun; so you see there can hardly be much doubt of what happened in presence of so many witnesses—otherwise, where would be the value of evidence?

Down went the three craft, the shovel leading—down past weird Bemersyde, past leafy Dryburgh, through the great woods of Mertoun, over Rutherford, and so to Makerstoun. Here dwelt a witch, a close ally of Michael's, who flew out of the Corbie Craig in the form of a raven, and reminded him, with warning croak, that he had done wrong to go afloat, inasmuch as running water was fatal to all enchantment. So the wizard, landing at once, found his power return to him. He used it to cast a bar of rock across the river, so that the flow should be stopped and the fugitive's boat be left a-dry. But in his excitement he stood with one foot in the water, and at that spot the whole volume of the river gathered together, forming the Trows, which may be seen at this day, and

flowed through the gap, enabling the demon to escape to sea, to be seen no more, but leaving ample proof to a generation seeking after a sign, in the form of a sandbank at the place where he left his shovel.

Now this must have happened between the years 1214 and 1300, the span of Michael Scot's life; but one may peer beyond that era into the dimmest past, and find that neither oral tradition nor written record indicates any lord of Makerstoun other than a Makdougal, which is the name borne by the present possessor. The house of Makerstoun was, and is, a branch of the ancient Celtic clan Macdougal or Macdowall, who still own much land in Galloway and Argyll. But the Celtic blood of the present laird contains a strong blend of Saxon. Descended in the male line from the Pringles of Gala, in the female line from 'Auld Wat o' Harden' and Mary Scott, 'the Flower o' Yarrow,' and by a later marriage from Anne Makdougal of Makerstoun, none can boast a richer admixture of ancient Border blood than he.

These thoughts and the like crowded into memory as I hurried down the woodland path that leads to the Trows, but you may be sure that they did not clog my footsteps. Too many of the golden hours had sped already; for in the house where I was lodged were certain royal guests, and all we humbler mortals were expected to parade at breakfast to do them honour. Ay, and to sit right on to the end till the last slice of toast had been munched, the last tea-cup emptied, so that it was high noon before I got my gear rigged up.

The river was very low—too low to excite much hope of sport—but there had been much rain in the night, and the fisherman warned me that 'she' was waxing already,

and that at any moment she might come down in dirty spate. The wind was boisterous, flinging the earliest gold of autumn upon the waters, and curling the surface of the still pools bravely. The sun shone broad upon the great oaks, but kindly clouds barred its radiance at times. It was an ideal fishing day, if only 'she' would stop rising.

So down we sped to the Doors, and I stood once again upon Michael Scot's massive dam—beshrew me (whatever that may mean) if I could believe myself forty years older than when I stood there last! The tail of the pool should be tried first, but that cannot be done without a boat; so we embarked, and sidled stealthily down the rock-side, careful not to disturb the good lying at the top. The water was clear as gin, and, as aforesaid, very low, so it was the tiniest 'silver gray' in my box that was presented to the invisible inmates of the pool. Hardly had the little fly taken half a dozen flights across the water when there came a disturbance in its vicinity. A good 'boil' in mid-stream, but no corresponding 'rug' at the line. Just the sort of rise that is most trying to over-sensitive nerves; for if you strike a salmon on the rise, as you would a trout, it is almost certain that you will not only miss him, but disgust his excellency, so that he will not move again. The 'boil' is generally caused by the fish poising behind the fly to inspect the novelty. If he doesn't fancy the look of it he lets it pass; but if you don't snatch it rudely away, the chances are that, having been at the trouble of coming to the surface, he will not return without making a grab at it. And so it happened in this instance. The fly continued its journey across the stream; before it reached the hither side the line tightened with a twang,

the greenheart bent in sympathy, and in five minutes a nice grilse of 7 lbs. was stretched upon the rocks.

Now a boat is a mighty convenience in a big river—in fact, ninety per cent. of the salmon casts in Tweed cannot be fished without one; but undoubtedly it is a boon that every good angler dispenses with as often as he can. In the low state of the river on this day the upper part of the Doors was within easy command of one standing on the rocks. Standing thus, I met with luck again. No grilse this that went boring down the entire length of the pool and then rushed swiftly up again, as if aware that his best chance was in a slackened line. Baffled, but barely so, in these tactics, he took to wild fighting, racing close along the farther shore until his descent into the broken water seemed inevitable. Just as I was stepping into the boat to follow him he yielded to the strain, and the rest of the combat was fought in the Doors pool. At its conclusion a noble twenty-pounder was laid beside the grilse. It was now one o'clock; the river had risen only a couple of inches in the hour, but already the current was tinged with a milky hue, ominous of the approaching flood. The Red Stane and Elshie were rapidly skimmed without result; it was with feeble hope that I began at the top of Braidmouth. We were half-way down when a fish rose above the boat. We pulled up again, and he took the fly at the first offer—a pretty grilse of $7\frac{1}{2}$ lbs., with the tide lice on him.

And now reeds and branches came floating down the stream; the water turned quite thick—the spate was on. Nothing for it but to wind up and add one more might-have-been to the long list. Yet were he a churl who should grumble after landing the only three fish touched

in an hour and a half's work. Still, there had been one other fish, a fine fellow that flashed up at the fly in the Straik within three yards of my feet, and missing it, refused repeated invitations to return. Unquiet fancy pictured him the best of the lot.

LXV

Familiarity has borne its proverbial fruit in respect to a very gorgeous family of birds. An ancient Pheasants Persian story tells how a philosopher was brought before the Shah, who, nettled by the indifference he showed to the splendours of court and palace, asked him whether he could imagine greater magnificence. 'I have seen the plumage of the pheasant,' was the wise man's disappointing reply. Well, everybody has seen the plumage of the pheasant, but comparatively few are familiar with it at its best. In the first place, of the tens of thousands of cock pheasants which may be seen hanging in poulterers' shops during the winter months, only a very small percentage are birds more than a few months old; and birds of fine feather require two or three seasons' growth to perfect their display. Secondly, the cock pheasant in winter dress is not nearly such a splendid creature as he is when he goes a-courting in spring. At that season the plumage acquires extraordinary lustre, reflecting purple, green, and golden lights; the ear coverts develop into conspicuous crests, and the naked skin around the eyes, showing as a mere scarlet spot in winter, becomes inflated so as to cover the whole side of the face, rising into a glowing comb above and drooping as a rounded wattle below.

Unluckily, as I think, the old English pheasant, *Phasianus colchicus* of ornithologists, the 'black pheasant' in gamekeepers' parlance, is now scarcely to be found anywhere pure within the British Isles. This fine bird, which has not a white feather upon its whole body, had its original home in ancient Colchis, that part of Asia Minor which abuts upon the east of the Black Sea. The river Phasis, now called the Rioni, gave the pheasant the name it bears in every European language. From Colchis the bird was carried westward with Roman conquest and civilisation, finding congenial quarters in the British forest. Here it must have become fairly common at an early date, seeing that in 1059 King Harold prescribed *unus phasianus* as an alternative to a brace of partridges in the rations or *pitantiæ* of the canons of Waltham Abbey. Henry VIII. had a French priest in his pay as 'fesaunt breder'; but these birds were not reared for sport, only for the table. Pheasant-shooting was still at a primitive stage in the seventeenth century, to judge from an engraving by Hollar, upon which is inscribed the couplet—

'The Fesant Cocke the woods doth most frequent,
Where Spaniells springe and perche him by the sent';

a method which gave the sportsman a convenient sitting shot.

It is amusing, in these days when pheasants are reared by the thousand for shooting, to read the following in the diary of Colonel Hawker, that great preceptor in the use of the fowling-piece—

'November 11, 1812. Walked out from the town of Glasgow (after twelve o'clock), and bagged four partridges and one

pheasant—a very old cock bird. The latter was spoken of as an extraordinary circumstance in this country, and from what I heard, it appears to be one that several people had been a long time in pursuit of. I got a random shot at a woodcock, which I could see nothing of at the moment of firing; and as the lairds of this country take especial good care to turn their timber into money before it is large enough to bear a man's weight, I was prevented being able to mount my marker in a tree, which is, of course, the sure way to secure a woodcock for the bag.'

Colonel Hawker's pheasant, doubtless, was one of the old Colchic breed, which, as I have said, is scarcely now to be found of pure strain in these islands, owing to the freedom with which it crosses with the ring-necked pheasant (*P. torquatus*), which was introduced from China early in the nineteenth century. It is hard to say which is the more beautiful bird; the Colchic cock excels in deep, rich tones of colour, while the plumage of the ring-necked pheasant is in a lighter key, with buff flanks and grayish-blue rump and upper wing-coverts. The ring-necked cock also carries a buff cap on the top of his beetle-green neck. The hybrid between the two races is inferior to both in coloration. A third species, the Japanese *P. versicolor*, distinguished by a wondrous green lustre reflected from the plumage in certain lights, has been naturalised with us lately, to add to the confusion; and as the hybrids of all three breed freely together, it is hopeless to attempt regaining a pure strain. As for the fourth species, which, were the ground unoccupied, would thrive and multiply in our woods, the magnificent Reeves pheasant, with its snowy head, gold-spangled coat, and immensely long, barred tail, its permanency must ever be precarious, because of its readiness

to mate with the other three species, the hybrids, in the case of the Reeves pheasant, being infertile.

Among pheasants, the cock bird has a monopoly of fine feathers. Being a polygamous rascal, undertaking no domestic duties, he has no occasion for protective coloration; whereas the hens are clad in sad raiment, differing so little in the various species that it takes a practised eye to distinguish between them.

Let me add a word in favour of the golden and Amherst pheasants, which, though useless for sporting purposes, are easily naturalised, and add an exciting charm to our woodlands by the extravagant glory of their plumage. They are not pheasants at all, say ornithologists, who arrange them in the separate genus of *Thaumalea*; but their habits and requirements are those of pheasants, and they are as easily reared and established in the woods. The gamekeeper will look askance when you propose to turn them out, for it is an old but erroneous tradition that they drive the common pheasant away. The silver pheasant (*Euplocamus*) is indeed a truculent fighter; not so the golden and the Amherst. But you should make your choice, no easy one, between these two gorgeous fowls, for they mate indiscriminately, which results in a hybrid race, propagating itself freely, to the manifest detriment of the beauty of both species.

LXVI

Who has ever heard a good word spoken for wasps? The appearance of a single specimen at a human breakfast-table is enough to upset the Wasps nerves of the whole party. Nothing is heard but expressions of hatred, and of terror, the parent of hatred.

‘Horrid beast!’ ‘Oh, *do* kill it!’ ‘Oh the brute, it’s coming at *me*!’ and so on. A panther escaped from a travelling menagerie could hardly cause more dire commotion, and peace is restored only by the immolation of the intruder on the brink of the strawberry jam.

Yet, come what may, I will own up to a warm, though hitherto clandestine, affection for these cleanly, sprightly, valorous insects. To most of us, a wasp is but a wasp, a creature of unmitigated malignity, with two business ends, one for stinging, the other for ruining fruit. Few persons suspect that the recognised species of wasps—solitary, social, and fossorial—are already numbered by thousands, and probably as many more await recognition in remote parts of the earth. Many of them perform beneficent service by the havoc they work among caterpillars and destructive grubs; all of them rival the much-praised honey-bee in the virtues of industry and parental solicitude.

Of social wasps alone we have eight species in the British Isles, whereof three build subterranean nests, three hang them from branches, while the justly-dreaded hornet builds his house upon the ground. All social wasps conform to the rules of apian architecture in building hexagonal cells for their young; but whereas the honey-bee secretes wax for building material, wasps can only provide a kind of cement with which they fashion shredded vegetable fibre into a beautiful kind of *papier-mâché*. None of our native wasps store honey, nor, luckily, do they swarm like bees, though some exotic species do both. It is the queen wasp alone that, having survived the winter, which destroys all her lovers of the previous autumn, founds the nest single-handed; nor

does she receive any assistance in building till she has reared and fed her first brood. Then the young wasps co-operate with a will, resting not from toil till the edifice is finished and the colony complete. It seems a woful waste of skilled labour that the beautiful structure serves only for a single season, and that the work should have to be done afresh from the foundation every year by a new queen. Even our own precious leasehold system, so ruinous to excellence in street architecture, does not affect masterpieces like Westminster Abbey or Somerset House.

Perhaps it savours of slander to speak of the queen wasp's lovers. In wasps the distinction of sex is fluctuating; unlike bees, their nature is so plastic that there are individuals intermediate between male and female, possibly destined to become one or other as circumstances arise. Parthenogenesis — *Lucina sine concubitu* — is believed to be common among spinsters of the race; which notwithstanding, the perpetuation of wasps is exceedingly precarious. Abundance of queens in spring by no means ensures many wasps in autumn, nor *vice versâ*. Witness the caricature of summer we had in 1903. In the bitter spring of that year queens were rather scarcer than usual, yet the autumn was memorable for multitude of wasps. One would have supposed that the intemperate deluge of June and the inclemency of July would have been fatal to creatures so sensitive of cold. They can keep warm, indeed, by staying at home, for the temperature within the nest is always considerably higher than the external air; but how did they manage to collect material for building and food for their ravenous young?

Almost more interesting than the habits of social wasps

are those of the *Eumenidæ* or solitary wasps and of the *Fossores* or digger wasps. The grubs of all three groups are mainly carnivorous; those of the solitary and digger species appear to be exclusively so, and the mothers are skilled housewives. Some make cells of porcelain formed of clay moistened with saliva; others dig out burrows in the soil to serve as nurseries; a third kind tunnel into timber; while a fourth family make shift as burglars and parasites on bees and other insects. Each is true to the traditional craft of its species; but how is that tradition transmitted through the generations? The life-span is bounded by a single season, during which the creature passes through a series of strange metamorphoses. Scarcely ever can an individual of one generation witness the earliest stage in active life of the next, and, except in the brief intercourse of the sexes, these solitary workers hold no communion with each other. Provision for offspring which they shall never see is the one purpose for which digger wasps labour with unceasing industry and unerring skill. At least the females do; for the males, submitted to a human standard of ethics, are worthless fellows, never doing a single turn of work, and apparently unaware that there is any work to do.

The number of digger wasps is so vast (upwards of a thousand distinct species of *Mutilla* alone have been classified) that it would require several volumes to describe the infinite variety and complexity of their domestic economy. The feature distinguishing the whole group of diggers is artistic discrimination in the use of stings. Some prey on caterpillars; others on the grubs of bees or beetles; while the *Pompilidæ*, the most numerous family in the group, make spiders their special game, and

have to fight hard for it, for the venom of some spiders is potent. In all cases it is for their young, not for themselves, that they go a-hunting.

A typical example of the way a digger wields its sting is furnished by the wasp *Scolia*, as elucidated by the French naturalist Fabre. Warned by the waning of summer suns, the mother *Scolia* disappears underground, and burrows till she finds a lusty grub of one of the chafers, and stabs it with her sting. Then she deposits an egg on the lower surface of her victim, whence in due time will be hatched a hungry maggot which will proceed to devour the grub. But note: if Madame *Scolia* were to stab the grub to death, decomposition would render the carcass uneatable before her offspring was hatched. She knows better than to do that; she plants her sting delicately—M. Fabre says upon an important nerve ganglion, so that the grub remains alive, but paralysed. So soon as the maggot is hatched, it proceeds to eat its way into the body of the chafer-grub; but not at random. It devours muscular tissue only, carefully avoiding the vital organs, which it reserves as a *bonne-bouche* when the grub's skin is empty of all else. Life is preserved in the grub to the very last moment, and the food, therefore, remains fresh, till the youthful *Scolia*, full-fed, turns comfortably into a cocoon and awaits resurrection as a perfect wasp.

Such is one of innumerable tragedies that underlie our flower-decked fields, so hard to explain as the outcome of 'a fortuitous concourse of atoms.' The life-purpose of *Scolia* appears, at first sight, unutterably cruel; but it is not so bad as it seems; not one whit worse, in fact, than one of our own slaughter-houses. It has been proved, by

a somewhat barbarous experiment, that the wasp stings her victims, not only into paralysis, but into insensibility. An unwounded chafer-grub was taken and bound so that it could not move. A young *Scolia* maggot was placed upon it, and ate right away into the larder provided for it; but it had not gone very far before the grub perished from sheer pain; whereupon *Scolia* died too, probably from indigestion.

November

LXVII

ONE of the brightest pages in memory carries the record of a certain solitary ramble on a Sabbath morning along the grassy cliffs which stretch southward from Machrihanish, beloved of golfers. Better folks than I betook themselves to kirk or chapel, but it would have taken a sermon far above the average to compensate me had I missed the prospect before me as I sprawled on the fragrant turf of Skerrinagal. Scarcely a breath of air stirred upon the summer sea; the high sun poured mellow radiance upon the tranquil expanse and lit up the distant bluffs of Gigha. In the green, translucent tide, a hundred feet below me, three huge animals were at play, darting under the surface swift as dace, then rising 'head and tail' like salmon or porpoises, and anon pursuing each other out of sight in the deep, to reappear next minute in their endless dance.

Whales

They were lesser rorqual whales (*Balænoptera rostrata*). I have called them huge animals, and rightly so, compared with the average run of creatures one may encounter in a Sunday stroll; but in truth the lesser rorqual is a mere pigmy alongside some of his kin, his maximum stature being about thirty feet.

This (1905) is the second year in succession which has witnessed the abandonment by the Government of the

Whale Fisheries (Scotland) Bill, a measure designed to regulate the youngest of our home industries. There must be many persons to whom the very existence of that industry is unknown, and these may be surprised to learn the proportions to which it has grown within the few years that have passed since its establishment in Scottish waters by Norwegian fishing companies. I have before me the returns of whales killed at the four stations in Shetland during the season of 1904, showing a total of no less than four hundred and fifteen, whereof all were finners or rorquals (*Balænoptera musculus*) except twelve—namely, one sperm whale, eight hump-backs (*Megaptera boops*), and three Rudolphi's rorquals (*Balænoptera borealis*). By far the most valuable of these prizes was the sperm whale or cachalot (*Physeter macrocephalus*), which occurs but rarely in British waters, being a native of tropical or subtropical seas. The cavity in its enormous head contains that peculiar form of fat which, when refined, becomes spermaceti; and the vast tracts of blubber along the sides of the animal are the source of sperm oil. A cachalot of average size yields about sixty barrels, equal to ten tons, of this valuable oil. The animal belongs to the group Odontoceti, or toothed whales, carrying five-and-twenty serviceable pieces of fine ivory in its lower jaw. The specimen secured by the Alexandra Company measured fifty-six feet long, and had been making effective use of its excursion into northern waters, seeing that its stomach contained the remains of many cuttle-fish, a large skate, an angler fish (*Lophius*), the head of a great shark, as well as some lumps of blubber which the shark, just before it met its doom, had bitten out of the flanks of a rorqual.

Now it is clear that it never would have paid to establish whaling-stations in the Shetland Islands on the outside chance of capturing cachalots; neither was it possible to tackle the rorquals which abound off these islands with the engines and weapons employed five-and-twenty years ago. For the rorqual is the mightiest animal, past or present, upon the globe. Even the fossil *Diplodocus Carnegii*, of whose skeleton Mr. Andrew Carnegie lately presented a facsimile to the British Museum, cannot compare with it in bulk, although by means of a preposterous prolongation of head and neck that gigantic quadruped attained an extreme length of more than a hundred feet. Until the invention of a combined harpoon and explosive shell, the Norwegian whalers carefully avoided striking rorquals, although they abound off the coasts of Norway, because of the unmanageable strength of these monsters. Steam whalers, however, equipped with this formidable artillery, now enable the men to encounter rorquals upon more than equal terms; and, at the rate the pursuit is being pressed, it cannot be many years before this noble creature becomes as scarce as the right whale of Greenland.

Nevertheless, even with the most complete equipment, the hunting of this big game is attended with no trifling risks. In March 1903 the steam whaler *Puma* struck a very large rorqual in Placentia Bay, the shell exploding without injuring the vitals. The whale set off at score. For six-and-twenty hours it dragged the vessel, with screw reversed, and finally was secured at a point upwards of a hundred and twenty-two miles from the place where it received the wound.

Rorquals belong to the group of *Mystacoceti*, toothless

or whalebone whales. Four species of them may be met in British waters, all distinguished from the right whales of Arctic and Antarctic seas by a vertical fin on the back, whence they are known by whalers technically as 'finners.' The giant of the race is Sibbald's or the Blue Whale, which may be looked for measuring eighty or eighty-five feet in length; but the common rorqual is the chief game of the Shetland whalers, the bulls averaging about sixty-three feet in length, and the cows sixty-six feet. The blubber of rorquals is far less plentiful than that of the right whales and the cachalot, and their whalebone is inferior in quality to the Greenland article (the cachalot carries no whalebone); but, whereas among all the industrial triumphs of science, no effective substitute has been devised for whalebone, all that can be obtained finds a ready market in Paris. The oil from the blubber all goes to Glasgow.

There is a fascinating mystery about all the *Cetacea*, great and less great. How did warm-blooded, air-breathing animals find their way into the waters, and why did they remain there? The late Sir William Fowler recognised their nearest affinities among the Ungulates or hoofed animals; and nobody who has visited his Whale Room at the Museum in South Kensington can doubt the thoroughness of his research. Neither should it be forgotten that, four centuries before the Christian era, Aristotle, who had no mechanical aids to vision, obtained such a profound insight into the scheme of animated nature as to separate the cetaceans from the fishes. But nearly two thousand years had to pass before human intelligence rose to adopt and confirm his judgment.

It is not good to live near a whale-fishing station. The

atmosphere becomes rank with the intolerable stench of boiling blubber; clouds of scavenging seagulls cannot overtake the constant accumulation of offal and refuse; the bays and sea-lochs are made hideous by coagulating blood and festering oil. Hence the bitter cry of the Shetland Islanders, who, if they lack many of the luxuries and much of the ease of civilisation, have been able to count hitherto upon plenty of pure air and clear water. Naturally objecting to their sea-girt homes being converted into vast shambles, they appealed to Parliament for the regulation of those whale fisheries which the Norsemen have planted on their shores. Parliament lent its ear. Last year, and again this year, a bill for the purpose was introduced; and pity 'tis that time was not found to deal with a measure which is essentially uncontroversial. But proceedings in Parliament too often suggest the analogy of children at play. Too much of the time is spent in disputing about the rules of the game, in discussing whether certain rules should be altered or suspended, and in one side accusing the other of unfair play. And so the session ebbs to an end, much useful legislation being crowded out at the last.

To the reality of the Shetlander's grievance in this matter I can vouch from personal experience. Some years ago a small rorqual, about forty feet long, was stranded in a winter storm, half a mile to windward of my library window. The creature was the subject of great interest to all in the neighbourhood. The frivolous snapped their kodaks; the frugal hacked out the whale-bone; but there was no apparatus in the district to deal with the blubber, so the carcass remained intact. As time wore on, decay set in. Evil odours were wafted

inland, faint at first, but waxing daily, till they threatened to become overpowering. Our inspector of nuisances is a diligent official, but he was staggered by the spectacle of tons of decomposing whale-beef and blubber. Luckily, our shallow bay is not a favourite resort of rorquals, and he has not been called upon since that winter to deal with flotsam and jetsam on a similar scale.

LXVIII

From the whales to the midges is a long step, seeing
 Midges that a fair-sized rorqual is about twenty thousand times the length of a midge; but to the average citizen the presence of a swarm of midges is of more moment than many whales. The term 'midges' is used to denote the whole family of Chironomidæ, of which there have been two hundred and sixty-eight different species identified as inhabiting Britain. But this includes all the gnats, which only occasionally give much trouble in this country; our affair is chiefly with two or three species of *Ceratopogon*, a ponderous polysyllable to apply to a creature measuring less than the twentieth part of an inch in length. The amount of torment which these minute creatures are capable of inflicting upon the lord of creation, let those testify who have encountered them on the moors or by the side of a salmon pool. And note, that it is believed that the females only thirst for human blood, the males spending their brief existence in perpetual flirtation. They prefer human victims because of the smoothness of their skins. Many a time must the problem have presented itself to persecuted mortals, What do these creatures subsist on where no human being comes?

The intense labour necessary to the study and classification of such minute and fragile creatures has not deterred men of science from undertaking both. It is the privilege of mere smatterers like myself to gratify curiosity by the easy process of reading what they have put on record; but this parasite habit ought never to weaken our admiration for those resolute minds who apply themselves humbly to working out the secrets of nature in the way prescribed so long ago as the only one to attain knowledge—‘Line upon line, line upon line; here a little, and there a little.’ It is no matter for wonder that some confusion still reigns in understanding the genus *Ceratopogon*; but the members thereof which afflict men and women seem to belong mainly to five out of the forty-nine recognised British species—namely, *Ceratopogon bipunctatus*, with a white dot on each of the dusky wings; *C. pulicaris*, with white wings dotted with brown; *C. nitidus*, with a black and shiny body and pale veins on the wings; *C. lineatus*, a gray-headed rascal with a yellowish tinge on the wings, at least of the female; and *C. femoratus*, with shiny black body and milky wings tinged with brown. Needless to say, that none of these distinctions can be noted without the aid of a pocket lens, such as no one who cares for nature will ever be without. Possessed of a good lens, the sufferer may derive what satisfaction is to be had from the knowledge that his epidermis is being tortured by the proboscis of *Ceratopogon bipunctatus*, which breeds under the decaying bark of trees; of *C. lineatus*, which breeds in the water; or of *C. lateralis*, which breeds in dung.

LXIX

The spring and summer of 1905 will be remembered by Goldfinches lovers of wild birds (who, be it noted, are the very antithesis of bird-fanciers) because of the reappearance of the goldfinch in Scotland in considerable numbers. Reappearance, I say advisedly; for although this beautiful and useful creature probably has never been wholly absent from the country, it had become so exceedingly rare that, until this season, many years passed without my seeing a pair, except in a cage, in Galloway. The reason is not far to seek: the goldfinch pays dearly for the fatal gift of beauty, and its pretty, engaging demeanour in captivity; moreover, it is the easiest of all songsters to capture, owing to the simplicity with which it yields to the summons of a decoy bird. The trade in goldfinches at one time was enormous. In the year 1860 Mr. Hussey stated in the *Zoologist* (page 7144) that the annual average taken and sent away from Worthing was more than 11,000 dozens, nearly all cock-birds; and in 1873 a witness declared before a select committee of the House of Commons that, when he was a boy, he could take forty dozens in a morning near Brighton. These being birds just arriving on their spring migration, intending to nest in Great Britain, it is no matter for wonder that goldfinches became nearly extinct with us. That they have begun to return in considerable numbers is one of the gratifying results of the Wild Birds Protection Acts.

Unluckily, the powers under these Acts are not universally appreciated as yet. While some local authorities have been slow to adopt restrictive measures,

others have been too precipitate in their application, not discriminating between mischievous and desirable species, as if all small song-birds lived on the same food. Now there is all the difference possible to the farmer and gardener between a flock of goldfinches and a flock of sparrows. Twenty sparrows will eat as much corn as a fine turkey, yet nothing is commoner than to see the hedges round a field of standing corn swarming with hundreds of sparrows. But the goldfinch has no use for corn—like the lark, he can't digest it—his diet being exclusively made up of small seeds, chiefly of the Composite order, such as thistles, dandelions, and groundsel. Nor does he share the taste of blackbirds, thrushes, and starlings for garden fruits. James Hurdis, who died more than a hundred years ago, knew that well enough. Among many true touches of nature in his *Village Curate*, he has one about the brightest of British finches—

‘I love to hear the goldfinch twit and twit,
And see him pick the groundsel's feathered seeds ;
And then, in bower of apple-blossom perched,
Trim his gay suit and pay us with a song.’

There are a few gardeners, no doubt, who are well aware that, on such a perch, a bullfinch would be bent on mischief, while a goldfinch is incapable of destroying a single apple-blossom ; but with too many of the craft all small birds are set down in the category of vermin.

Even in those counties where the councils have extended protection to the goldfinch, the police are not always alive to their duty in this respect. Last spring a visitation of goldfinches took place in a certain fair valley well known to me. Evidently they had come to nest, and, Heaven knows, there is no lack of thistles as an

inducement to them. Immediately the bird-catchers set to work. I appealed to the chief constable, who declared he had no power to interfere. I produced the list of birds scheduled by the county council for protection *all the year round*, and there, sure enough, was our little friend *Carduelis elegans*, and in the end we got the traffic stopped. It is certain that similar want of acquaintance with the law is the cause of illegal trade being prosecuted in other counties. Quite recently a correspondent of *Country Life* described how he had seen several boxes of wild birds—larks, goldfinches, linnets, and thrushes—at Portsmouth station consigned to a dealer in Manchester. I shall be surprised if the county council of Hampshire, the home of Gilbert White of Selborne, be found to lend its sanction to these proceedings. For, mark you, the barbarity of it consists not merely in consigning thousands of innocent wildlings to lifelong captivity, subject to all the diseases brought by imprisonment upon creatures of unceasing activity; but by far the great majority of them die in transit. Only a trifling percentage survive to become the pets, yet not less the victims, of their ultimate purchasers. The rate of mortality in snared birds, could it be accurately ascertained, would startle the tender-hearted mistresses of the little prisoners whom they cherish.

Howbeit, one should recognise gratefully the spread of a considerate love of wild birds among all classes of the community. The press has done laudable work in promoting this feeling, even among people whose lot lies far from rural sights and sounds, amid the din and dusk of great cities. Perhaps, as time goes on, the growth of that higher intelligence which has redeemed us from the

shame of bull and bear baiting, drawing badgers, and so forth, will lead us to find more delight in watching goldfinches at liberty than in confining them in a cage—in admiring the deftness with which they weave their beautiful nest than in taking advantage of their docility to teach them a number of unnatural tricks. Syme, in his *History of British Song-birds*, describes how a certain Sieur Roman made a living by exhibiting trained goldfinches. One of them shammed dead at the word of command, and allowed itself to be lifted by tail or claw without opening an eyelid; another stood on its head with its claws in the air; a third carried a pair of pails on its shoulder like a milkmaid of old; a fourth was trained to fire a little cannon; and so on.

LXX

To my taste, there are few things more dreary than so-called ‘entertainments’ consisting of the performance by animals of tricks contrary to or alien from their natural habits. It brings to mind Dr. Johnson’s sledge-hammer criticism of women preaching. ‘A woman preaching, sir, is like a dog walking on its hind legs. The wonder is, not that it should be ill done, but that it should be done at all.’ I will make an exception in the matter of fleas, which are sometimes trained to draw coaches or drive in them, and to go through other marvellous accomplishments, because anything which diverts a flea from its ruling passion is so much service done to suffering humanity. But performing lions, dogs, cats, and such like I have never been able to watch without a sense of shame. Dogs especially, a race

Collies

whose whole ambition and consuming desire is to be helpful to man, ought to be shielded from such humiliation. It is dishonouring enough to a dog to be kept merely as a pet. A few years ago, fashionable young men conceived a craze for collies; many a time has one's heart burned to see a collie—all his potential talent lulled to indolence—loafing about London parks and streets at the heels of a master as idle and overfed as himself. One longed to give the beast a chance of putting to the test his fleet sagacity, his consummate understanding of a hereditary vocation. How the author of *Rab and his Friends* would have scorned the standard of excellence decreed by modern committees for the judging of collies at shows. No money is spared to produce a perfect article; more than one fashionable sire has been sold for a thousand guineas. But it is not the noble qualities of the race that secure a prize; that goes to the animal which conforms most nearly to arbitrary and trivial distinctions of colour and shape. Far more satisfactory, and very interesting to watch, are the trials of sheep-dogs which have been instituted by some of the agricultural societies.

Reference has been made to *Rab and his Friends*, a little volume so well appreciated as to bar quotation; but here is a delightful paragraph from one of Dr. John Brown's less-known writings, a note made as he came off his beloved Minchmoor—

'We now descended into Yarrow, and forgathered with a shepherd who was taking his lambs over to the great Melrose fair. He was a fine specimen of a Border herd—young, tall, sagacious, self-contained, and free in speech and air. We got his heart by praising his dog "Jed," a very fine collie, black and comely, gentle and keen. "Ay, she's a fell yin; she can do a'

but speak." On asking him whether the sheep-dogs needed much teaching, "Whyles ay and whyles no. Her kind (Jed's) needs nane. She sooks't wi' her mither's milk." On asking him if the dogs were ever sold, he said, "Never but at an orra time. Naebody wad sell a gude dowg, and naebody wad buy an ill yin."

Jed, being black, would have run no chance of success at a modern dog show, for fashion has decreed that yellow and white is the orthodox colour for collies, probably for the senseless reason that the great majority of working collies are dark coloured—black, rich tan, and white. As for her master's admission that language was not one of Jed's accomplishments, perhaps that was no detriment to her qualities as a companion.

LXXI

This season of 1905 to which we are just bidding farewell will be remembered by those who **Passing** take note of external things pertaining to **Autumn** their happiness on account of several peculiarities. In the first place, although foreign imports have deprived the character of the harvest of much of its former importance, the harvest of 1905 must be recorded as one of the earliest on record. In many parts of Scotland the corn was safely 'under thack an' rape' at a date prior to the first reaping during the dismal wet autumn of 1903. Modern manures and high cultivation have altered many conditions in agriculture, else it is probable that the prolonged summer drought in the northern half of the kingdom would have rendered this another 'year o' the short corn,' like 1826, when the straw was so scanty that the corn was pulled by hand.

Upon forest trees the heat and sunshine have told with marked effect, ripening the year's growth and causing the foliage to assume such glory in dying as one seldom enjoys in our cloudy clime. The tawny mantle of the oaks, the russet splendour of the beech, the clear gold of Spanish chestnuts and Norway maple, have yielded to our eyes such a feast as is not often spread in Britain. But for intensity of colour—glowing carmine and vermilion—nothing has been able to vie with the geans or wild cherry. Against this lavish display there is much to be set. The sharp frost which recurred on nine consecutive nights in mid-October smote the garden like a black plague.

LXXII

There are few matters upon which the testimony of eye-witnesses is less trustworthy than the speed of moving objects. To realise this, one has only to read the evidence in cases against motorists. If the accused declares that he was running a moderate fifteen miles an hour, there will be persons ready to swear that the pace was five-and-thirty or forty miles. And neither party need be suspected of any intention to deceive. If this be so in respect of terrestrial locomotion, far more is it so in regard to aerial movement. The velocity of the flight of different kinds of birds has been for long, and still remains, a subject of keen controversy among ornithologists. There is the oft-quoted instance of Henry II. of France's falcon, which escaped from Fontainebleau and was recaptured at Malta twenty-four hours later, implying an average speed, including stoppages, of thirty-six English geographical miles

(equal to forty-one and a half statute miles) per hour. This is such a venerable incident that it may best be consigned to the limbo of tradition. Still, in searching more recent statistics, one arrives at estimates of speed even more startling. Herr Gätke devoted fifty years to observing and recording the movement of migratory birds in passage through Heligoland, and came to conclusions about their rate of travel which it is difficult to reconcile with probability. Thus, take the single instance of a bird possessing very moderate powers of flight, the northern blue-throat (*Cyanecula suecica*), a creature having affinity with the warblers and the thrushes. It breeds in Northern Europe, and migrates in winter to Abyssinia and India, yet it is exceedingly seldom that one can be seen in the intervening countries. 'Heligoland is the first point,' says Gätke, 'at which in the course of this [spring] journey it is met with unfailingly every year in very large numbers. . . . Like most birds, especially insectivorous species, the blue-throat travels during the night, setting out at dusk and ending its journey at daybreak, or immediately after sunrise. Hence it accomplishes its flight of more than sixteen hundred geographical miles from Egypt to Heligoland in the course of a spring night of scarcely nine hours, giving the almost miraculous velocity of one hundred and eighty geographical miles per hour.'

After this astounding calculation (which I quote here under all reserve) my own modest observation on a recent occasion may seem tame indeed. If one were asked to name a British bird of slow flight and sluggish wing-beat, very likely he would name the heron. Deliberate as the movement appears to the eye, the strokes amount to not less than 120 to 130 per minute. As to velocity, the

heron's speed is moderate, but far greater than might be imagined. One morning lately I started before sunrise in a motor to catch a main-line train at a station twenty miles distant. The air was perfectly still, my road lay level close along the shore, and not a human being was stirring on it. As we crossed a bridge over a little burn, a heron rose in the dusk, much agitated, and flew out to sea. After holding its course for half a mile or so, the bird turned to the right, and flew parallel with the road and with my car. Presently a bend in the shore brought the heron immediately in front of me, at a distance of about one hundred yards. We were running about up to speed limit—twenty miles an hour—yet the heron held easily ahead of us, and finally flew out of sight behind a hill. Now I am convinced that most people, viewing this bird's apparently leisurely flight, would have estimated its velocity at less than half the actual speed.

LXXIII

Those who were lucky enough to look abroad on the night of November 15, 1905, beheld the first display of rosy red aurora borealis which has been seen in this country since October 1870. At least I have neither seen, nor heard of anybody seeing, a red aurora since that year. The date is well impressed upon my mind by a remark I overheard in the street of a Scottish village where I was staying for salmon-fishing. All the inhabitants were at their doors or in the street, gazing awestruck at the heavens, across which shot quivering tongues, arcs, and rays of soft rosy light, reflected in the puddles of the wet road and pavement. 'That'll

**A Notable
Aurora**

mean,' I heard a man say to his neighbour, 'that the French and Germans'll be having a great battle.' A trivial remark perhaps, but one that was fixed in memory when, a year later, I was reading Canon Tristram's *Land of Moab*. It happened that the Canon was encamped on that night in Moab, and beheld the same striking phenomenon in the sky as we enjoyed in the north. Not only so, but he actually overheard his Arabs interpret it in the self-same way that the Scottish peasant had done—namely, the reflection or forecast of a mighty battle between the two great nations then at war.

The date of another notable display of aurora is fixed in my recollection in this way. On October 18, 1865, when I was a lad, I was travelling to Ayrshire, and heard on the way that the Prime Minister, Lord Palmerston, was dead. That night there was a magnificent aurora, to which Aytoun's stanza seems pertinent.

' All night long the northern streamers
Shot across the quivering sky,
Fearful lights that never beckon
Save when kings or heroes die.'

Of the physical agency in this beautiful phenomenon no authoritative explanation seems to have been made. There is a general tendency in scientific circles to lay it upon electricity, that broad back which has been made to bear so many burdens, such as headaches, sulky trout, water-divining, and so on; but, although the aurora is usually accompanied by magnetic disturbance, these are by no means invariable. Nor has the spectroscope solved the problem, for the spectrum usually given by the aurora consists of a single line in the greenish yellow, which does not coincide with the spectrum of any known gas.

LXXIV

There is no more engaging beast of prey than the little weasel—the whittret, as we call it in Scotland, **Weasels and Stoats** by a contraction of the syllables ‘white throat.’ It is bad luck that it is so irredeemably in the category of vermin, for undoubtedly it does far more good than ill to the interests of man. The present plague of rats, for instance, which has reached an almost intolerable pitch in many parts of the country, may be traced chiefly to two sources—namely, the feeding broadcast of thousands of hand-reared pheasants in the woods during the winter, and the rigorous suppression of weasels in the interests of game. There is no denying that the weasel is a blood-thirsty little rascal—nothing of his own bulk, furred or feathered, that crosses his path is safe from assault; but his favourite prey consists of rats, mice, and voles. It is doubtful, therefore, whether the game preserver, were he to succeed in extirpating weasels, would not incur greater evils by the multiplication of rats.

Mr. Millais, in his sumptuous work on *The Mammals of Great Britain and Ireland*, of which the second volume appeared during last autumn, has reminded us that weasels are expert climbers, and prey upon small birds, which they follow into the branches. I have never happened to see them so occupied, but a few days ago (1905) a lady staying in my house witnessed a deed of blood in this manner. Opposite her bedroom window stands a fine holly tree, thickly set with gleaming scarlet berries. A company of fieldfares were busy of a morning thinning the crop, when my friend noticed a disturbance among the branches. Presently there was a white flash

as something fell from the tree—a bird, and with it another creature of ruddy hue. The next thing she saw was, not a weasel, but its near relative, a stoat, lifting the bird bodily, and scampering down the gravel path to shelter. Now there was the less excuse for this raid on the fieldfares that my garden contains a deplorably large population of rats and field-voles; but both stoats and weasels are chivalrous sportsmen, and hunt for love of the chase as well as for the pot. No doubt there was more excitement in following a winged quarry among the branches than in tracking a rat along the ground. Apart from the difference in size, which is considerable, the stoat may always be distinguished from the weasel by the black tuft at the end of the tail. A distinction of singular note, this, furnishing the sable points in ermine fur, which was so highly esteemed in the reign of Edward III., that the wearing thereof was reserved by statute as an exclusive privilege of the royal family. The ermine is nothing else than the stoat in its winter dress. This is regularly assumed in the northern parts of the kingdom; in the midland and southern counties the change is sometimes partial, making the animal piebald, but more frequently does not take place at all. Mr. Millais gives the following example of the sanguinary ferocity of this little beast of prey:—

‘Returning home one evening from ferreting, . . . I chanced to notice a new hole, such as is sometimes made by a female rabbit when she breaks away from a main burrow, and looks for some quiet place in which to deposit her shortly expected family. When I looked into the hole, I saw the leg of a rabbit protruding. I drew forth the warm body of a young rabbit about a fortnight old, and the lacerated neck and head showed plainly who had been the culprit. Procuring a hedge-stake, the

keeper and I proceeded to dig out the hole, in which I expected to find the stoat and kill it; but on coming to the bottom of the burrow, which was quite a short one, we discovered no fewer than eight other young ones, and the mother, all lying murdered in similar fashion. None of the flesh had been eaten, and it is doubtful whether the murderer intended to return, as we failed to trap him.'

The thoroughness of Mr. Millais's treatise, combined with the costliness of his princely volumes, which must make it difficult of access to many people, must be my excuse for making so long an extract.

I must add a tribute of gratitude to the stoat that killed the fieldfare. It found a mate, and the pair have remained in the garden throughout the summer and autumn of 1906, with the result that *not a rat is to be seen*, and the voles have nearly disappeared also.

December

LXXV

IT is many years since I gave up practice with the 'scatter-gun.' Truth to tell, the competitive element dominates modern shooting to such an extent as to rob it of the zest it once had for me. It has developed into a consummate exhibition of marksmanship, but the wild flavour has fled from the big battues.

I happened once to be staying in a country house with the late Lord Iddesleigh, then Sir Stafford Northcote. Our host, in arranging for the amusement of his guests, inquired, 'Do you shoot, Sir Stafford?' 'Intransitively, I do,' was the reply, thoroughly enigmatic to our worthy host, who had forgotten his Latin syntax. Well, I was present at a shooting-party during this winter (1904) in which I did not take even an intransitive part. Nevertheless, I thoroughly enjoyed the sport, for it retained all the simple, leisurely character which used to satisfy all of us *dans le temps*. Pheasants were the quarry; and that made it all the more remarkable, seeing that pheasants, more than any other kind of wild animal, have been multiplied artificially, and elaborately disciplined to produce sport. It was in the park of a certain noble earl in the Midlands, and when he told me that he was going to shoot his pheasants, I thought I knew what to expect.

Some gilded youths would turn up from London, faultlessly appointed, with thousands of rounds of ammunition; perhaps a couple of county magnates would grace the scene; their practice was sure to be good, but their bearing would be listless, and their conversation—with a stranger like myself who did not shoot—laconic. What really happened was this. After breakfast, a four-wheeled phaeton crawled up the avenue to the door. Out of it tumbled an elderly parson, tremulous with eagerness, carefully husbanding one double-barrelled gun and a bag of cartridges. Shortly after, another and younger clergyman arrived, bringing two pupils with him, the taller of whom I found was to be one of the guns. Next came the estate agent, and a third parson—our host and his brother-in-law completing a party of seven guns. We were soon at work. Game was plentiful; the pheasants flew high and well—rather *too* high and well, if the truth must be told, for I was disappointed in my hope of watching fine marksmanship. But it was worth a lot to see how thoroughly, how supremely, these excellent fellows enjoyed the sport. Not for much—very much—would I have missed it. And then the luncheon! At the last battue I had attended, proceedings in the open air were suspended punctually at 1.30, and the whole party, joined by the ladies from the castle, entered a huge marquee and spent an hour over a hot luncheon of courses, followed by coffee and liqueurs. A most agreeable picnic, even if there was rather too much of it, but for sport—! *field-sport*!!

It was differently arranged at —— (the name had nearly escaped upon the page). After a very pretty hot corner, where the scene had been enlivened by a brace of

foxes breaking away amid a bouquet of pheasants, baskets were produced from the game cart and laid out on the sunny side of a hedge. The rest may be imagined: we had plenty of cold provender, and wanted no more. The day and its proceedings remain among the brightest of memories, so delightful was the zest of the gray-haired parsons, no whit inferior in keenness to that of the student still in his 'teens, so refreshing was it to see their thoughtful host and neighbour providing for their amusement.

N.B.—This day's bag was *not* recorded in the sporting newspapers.

LXXVI

Fertile matter for speculation and controversy has been stirred in the columns of the *Field* by a discussion upon the meaning and origin of the Bird Names names of some of our common birds. Many of these are obvious enough, such as golden-eye, black-cap, water-hen, etc.; but others, having their origin in a dim antiquity, have become so worn and altered by use as to suggest ideas quite different to those intended to be conveyed. Take, for instance, the names wheatear and redstart, each applied to a bird of which the colour of the tail or rump is the most conspicuous feature in flight. The wheatear cares nothing for wheat, and it has no perceptible ear, that is, no ear to attract notice; but its white tail gleams with peculiar distinctness as it flits from stone to stone, wherefore the Saxon swineherds named it *hwit ærs*, white rump. So the bird with the fiery red posterior was designated in Anglo-Saxon, *réad start*, red tail. 'Finch' means what is smart and pretty. In provincial English the name

appears as 'spink,' an assimilation to the Welsh *pinc*, which means both 'a chaffinch' and also, as an adjective, 'gay' or 'fine.' Perhaps this word survives in Shakespeare's 'pink of courtesy' (*Romeo and Juliet*, II. iv. l. 62), and in our term 'pink of perfection.' The same idea of smartness and prettiness is enshrined in the title given to a bird very different in size and habits to the finches, namely, the jay, a name altered in spelling only from the French *gai*, in allusion to the gay plumage.

Habit and movement are indicated as often as form or colour. Thus the sparrow is 'the flutterer,' from a Teutonic base *spar*, signifying vibration or rapid motion; the swallow probably is 'the mover to-and-fro.' 'Hawk' is 'the holder or seizer,' being a shortened form of the Anglo-Saxon *hafoc*, which we retain as 'havoc' in a more general application. 'Nightingale' is more obscure, the connection with 'gallant' not lying on the surface. It means 'the singer of the night,' being compounded of *nihte*, genitive case of the Anglo-Saxon *niht*, and *galan*, to sing, akin to the Old French *galer*, to rejoice, preserved in our own words 'gala' and 'regale.' The present participle of *galer* was *galant*, 'gallant,' a word with which we should not find it convenient to dispense.

A duck means a diver, the bird that ducks under water; but when a swain applies the term to the object of his affection, he uses unconsciously a totally different vocable, which appears in Danish and kindred languages as *dukke*, a doll. The specific Anglo-Saxon name for a duck was *ened*; to denote the male bird the masculine terminal *reich* was added, signifying rule or authority. 'Endrake' was the old English word which we have shortened into drake, literally the lord of the duck. So *gans* became

softened into 'goose,' but remains distinct in 'gander,' the German *gänserich*, and in 'gannet.'

By common consent most nations have followed the Latins in naming the cormorant the sea-crow, our word being but a corruption of *Corvus marinus*, though some hold that the latter syllables represent the Welsh *morfran*, which means sea-raven.

Latin also is the origin of 'oriole'—*aureolus*, the golden thrush, a lovely creature which would make its regular home with us were it not for the accursed industry of collectors.

The local names of birds are often very interesting, preserving fragments of old-world speech. These are the days of 'collections.' If some dweller in the country would exert himself to catalogue the bird names in different districts, he would be doing worthier service than those who amass old postage stamps at fabulous prices. Unluckily, 'there is no money' in such a disinterested pursuit.

LXXVII

In these days of cheap abundance, the like of which the world has never seen, and to which it may **What shall** be that the world will one time look back with **we eat?** wistful wonder, full-fed folks are continually changing their fads of diet. It is not many years since people suffering the natural consequence of chronic repletion were prescribed a 'cure' consisting mainly of bread and butcher's meat. Green vegetables were proscribed; the homely 'tater' was anathema; acres of beef and mutton were consumed in simple faith that through them should length of days be most surely attained. Now the boot is

on the other leg: vegetarianism is all the vogue among those who take thought what they shall eat and what they shall drink. Bridge and boiled cabbage came in together, and who shall say which has the firmer hold upon persons of fashion? Like other fads, vegetarianism has left its mark on the Statute Book. In 1567 the Scottish Legislature enacted that, whereas 'it is a great hurte to the common weill of this realm the indifferent and dayly eating of fleshe within the same,' no person was to eat meat upon three days in each week. There is no bill at present before Parliament dealing with this matter, but who shall declare that such legislation is not impending? Only a few days ago I sat at dinner in the House of Commons next a young member (enviably young, as we reckon youth in that over-ripe assembly), rosy and plump, with all the outward semblance of a faultless digestion. *Ne crede colori!* Soon it was manifest that he was upon strict regimen: soup—fish—he would none of them; entrées—joints—he dismissed almost with a shudder: but he punished the pease, potatoes, and pudding properly. He assured me that fish and eggs were just as pernicious as a rump steak, but that of herbs, cheese, bread and butter one might safely partake. He warned me against tea and coffee as slow—not *very* slow—poison. Strange to say, he looked upon the wine when it was red, and lo! it was port.

Well, well; life-long habits are not to be broken in the twinkling of an eye. I slunk away, a shame faced carnivore, to the tea-room, there to risk my life with *le café qui caresse les digestions ravies*. It was encouraging to find there a physician of considerable note, an abstainer, I believe, sipping a comfortable cup of tea. Not so

comfortable, methought, as his merits entitled him to, for he was dipping dry toast in it. Now if there is one substance in which the catering department of the House of Commons excels it is butter. I ventured to suggest some. 'Butter!' exclaimed the medico-legislator, 'I never touch it. It is most pernicious.'

Now whither shall the plain citizen turn for guidance? Where doctors differ so widely and shift their ground with such bewildering rapidity, the temptation to exercise private judgment is very great.

Meanwhile vegetarianism seems to be on the up grade. The Roast Beef of Old England is not in it. The consumption of lentils and greengrocery, succotash and sweet corn, is going up by leaps and bounds. The favourite quack food is no longer bovril but grape-nuts, which, by the by, contain neither grapes nor nuts in their composition. 'Any nuts or apples, gentlemen?' cried a vendor of these fruits to the people on a coach at a race-meeting. 'No,' was the coarse reply; 'd'ye take me for a bloomin' monkey?' Well, but that is just what you are, argues the vegetarian. Look at your teeth: are they teeth of a tiger or a polecat? No, they are the teeth of apes, and you should feed accordingly. He points exultingly to the most gigantic terrestrial mammals—elephant, hippopotamus, giraffe, rhinoceros—all reared on herbs. And here, by grace of Mr. Carnegie, comes to clinch the argument the skeleton of the most enormous four-footed creature known—the fossil *Diplodocus*—measuring seventy feet from end to end, yet with weak jaws and grinding teeth betokening a vegetable diet. True, but to balance these the meat-eaters may weigh in with the marine mammals. Hitherto we have read in class-books

that whales lived upon jelly-fish, the nearest approach they could find to pumpkins; for the ocean is sadly deficient in nutritious vegetables, and its denizens are driven to a life of rapine unpleasant to contemplate. But Mr. R. C. Haldane can supply us with new evidence upon the diet of the greatest of all whales—nay, the greatest of all known mammals, extant or extinct—the rorqual (*Balænoptera musculus*).

The rorqual is not vegetarian; far from it. It is Mr. Haldane's lot to live in the odoriferous neighbourhood of three whaling stations which have been established in Shetland for the special pursuit of rorquals, and he devoted himself last summer to examining the contents of the stomachs of the 'fish.' He had plenty of opportunity, for the bloody work was brisk; no fewer than two hundred and thirty-six whales, all rorqual except seven, were accounted for during the season at these three stations. He found that 'kril' or cuttles and shrimps—millions upon millions of them—were the staple food of these giants between the middle of April and the middle of June. Then the herrings came in, as much as two barrels being found inside a bull finner on August 19. Desmoulins told us long ago that he had seen six hundred large cod and Lord knows how many pilchards taken from the stomach of a rorqual. Anyhow, a thousand herrings at a sitting must have been an agreeable change after weeks of jelly-fish. Nevertheless, in a paper communicated to the *Annals of Scottish Natural History* for April, Mr. Haldane says: 'I think that Finner whales only eat herrings when kril and shrimps are not to be got.' As for a sperm whale, only fifty-six feet long, which was taken at one of these Shetland stations, it contained

a very mixed bag—viz., a large skate, a fishing-frog or angler (*Lophius*), the head of a large shark, and lumps of blubber which the said shark, shortly before meeting his doom, had grabbed out of the flanks of a rorqual.

Thus the vegetarian's appeal to the great pachyderms, as proof of the superior physical results of a diet of herbs, breaks down. The hugest mammals in the world are carnivorous. Granted that the food of all terrestrial animals is of ultimate vegetable origin, it is found convenient to allow other creatures to undertake for us the lengthy process of browsing and gnawing, and to save time by supporting our systems with the condensed product. It is common, but unwise, to forget that it *is* condensed. Dim perception of this fact is, perhaps, one cause for the welcome shortening of bills of fare which has come lately into fashion, both in the best hotels and at the tables of discerning hostesses.

LXXVIII

Up to this point (December 1904), the most notable feature among winter visitants to the Solway Waterfowl has been the unusual number of shovellers. In the autumn of 1903 whooper swans appeared very early in passage, and in considerable numbers, whence confident presage was drawn of a hard winter. As it turned out, the winter months were remarkably mild, although the spring of 1904 developed more than common ferocity. This year I have neither seen nor heard of any whoopers in this district; but, as I say, shovellers have been much in evidence.

The visits of this species to the sanctuary lake are

very uncertain. Sometimes a whole winter passes without its welcome presence; but this season five or six have been there since early in November, including two full-plumaged drakes, and upwards of thirty are reported from a neighbouring sheet of water. If this be a token of permanent increase in this most desirable species, it may not be extravagant to attribute it to the agency of the Wild Birds Protection Acts. The late Lord Lilford observed some years ago that its numbers as a British-breeding bird were gradually increasing 'in the few remaining districts suitable to its habits'; and it seems as if a salutary check had been effected upon the industry of collectors, who demand, and, sad to say, obtain, a high price for British-laid eggs of the shoveller-duck. More than sixty years ago Yarrell wrote about one of the collecting fraternity at Yarmouth, who had made prize of thirty eggs of shovellers in a single season.

This morning, after a night of sudden and intense frost, I spent some time by the lakeside, verifying former observations about the relative shyness of waterfowl on a sheet of water where no gun has been fired with intent for more than sixty years. Leaving coots and waterhens out of account, the common mallards are the most confident of all, though when once on the wing they will never knowingly come within gunshot of boat or body. Next in boldness are tufted ducks, and then pochards; but golden-eyes, scaup, widgeon, teal, and shovellers never lose their intense suspicion of man and all his works, and never can be induced to share the repast spread daily for the swans. This is somewhat strange. The teal may be given up as incurably nervous; the widgeon as restless passengers, much persecuted at sea; but scaups, golden-



The Lake Sanctuary (Winter)

EDWARD A. EDWARDS

eyes, tufted ducks, and pochards, all diving ducks closely related to each other and of very similar habits in other respects, might be expected to entertain similar feelings towards the arch-enemy. Surface-feeding shovellers, again, are very like mallards in habit and shape, except for their uncouth extravagance of bill.

By the by, is it commonly known that this exaggerated feature only makes its appearance with maturity? Shoveller ducklings are hatched with just as dainty little 'nebs' as young wild-ducks have; but as they grow in weeks their noses grow in length and breadth until they disfigure an otherwise comely countenance. They must, however, be most serviceable tablespoons in sifting delicacies out of the ooze.

What a handsome bird is the adult shoveller drake, despite his dilated, lead-coloured beak. His head is greenish bronze, with just a dash of true beetle-green behind each yellow eye; a snowy breast borders abruptly upon the rich chestnut flanks and belly; the back is light brown, the scapulars and greater wing-coverts white, but the lesser wing-coverts display a beautiful light blue—unique occurrence of that colour in British waterfowl—and a speculum of green as vivid as any mallard's. Except the eider, the shoveller is the only British duck of which the under parts are darker in hue than the upper. As in other species of *Anatinæ*, all this finery disappears with the season of courtship, and Sir Shoveller sneaks about all summer in a shabby imitation of his wife's wardrobe. There is a good example of the male shoveller 'in eclipse' to be seen in the local museum at Carlisle.

LXXIX

Artfully undrapping before her judges, Phryne secured a
 Birds of verdict in her favour; but that was long ago,
 Ravin and æsthetic considerations weighed much with
 Athenian juries; whereas modern British law-courts must
 be deemed proof against any such influence. Nevertheless, physical beauty has not lost its spell over the general public; else how comes it that each succeeding year produces a fresh crop of books about Mary Queen of Scots? And for what reason, save her exceeding loveliness, has Lady Hamilton been given a place on the walls of our Valhalla—the National Portrait Gallery? Note, by the way, that Romney's picture is *not* a portrait of Lady Hamilton, but of that very naughty girl, Emma Hart, painted long before she had either met Nelson or married the elderly diplomat. So truly did Théophile Gautier write—

‘Il se fait d'ailleurs d'étranges revirements dans les réputations, et les auréoles changent souvent de têtes. Après la mort des fronts obscurs s'allument. Pour les uns, la postérité—c'est la nuit : pour les autres—c'est l'aurore !’

As with men and women, so with the lower animals, especially birds, comeliness is no warrant of character. Some of the most beautiful and interesting creatures have earned an evil reputation, proscribed under early Scottish statutes as ‘birds of ravin,’ depredators upon preserves required by greedy, omnivorous man for his own profit, pride, or pleasure. The lively jay, with exquisite tones of azure and roseate gray, broadly flashed with white as he takes wing; the intellectual magpie,

wearing, like Mar's retainers of old, a bold livery of sable and argent, in which a nearer view reveals unsuspected gleams of purple and green; the dauntless sparrow-hawk, whose yellow-circled eye darts defiance and hate at his captor, even in the moment of death—all these, and many more, are irrevocably inscribed on the gamekeepers' black-list.

Irrevocably, I fear; yet would I put in a word of extenuation for the jay. True it is that nothing delights this bird more than fresh eggs in their season, or a cherry-tree in full bearing. The market gardener must defend his crop, of course; but, under modern conditions of sport, what eggs is a jay likely to light upon which the gamekeeper need grudge him? The jay is essentially and invariably a denizen of the woods. Unlike his cousin the magpie, he never wanders afield for provender, therefore cannot be suspected of despoiling the nests of grouse or partridges. In the woods, the only game eggs he can find are those of pheasants, and who depends upon wild-bred pheasants in these days? Ninety per cent. of our 'rocketers,' at a moderate computation, are hand-reared birds, at which the jay may never come.

There! I won't press the case for my client further. I will but observe that a winter woodland without a pair of scolding jays seems 'kind o' lonely like.'

There is another group of fowls for which it is far more difficult to frame a plea; in fact, as a salmon-fisher, the only virtues I can afford to concede to them are their beauty and exceeding grace. I may as well begin by confessing how I was tempted once by a company of these birds to transgress, by intent at least, an unwritten law—nay, an honourable pact—that by which the woodland

mere, so often mentioned in these jottings,¹ has been kept a sanctuary for wildfowl during sixty years and more. Like Phryne's case, it happened long ago, when I was an Eton boy home for Easter holidays. One evening the keeper brought me word that there were some strange birds on the lake, the like of which he had never seen. At five o'clock next morning I stole from the house, gun in hand, and hurried down to the lakeside. I soon spied the strangers—nine of them—nearly as big as small geese, some splendidly arrayed in black and white; others, the females, in subfusc attire. They were out of shot from the shore, but I crept through the thicket, and lay opposite the little fleet, hoping it might drift within range. For five long hours I lurked in hiding, and it never ceased raining. The birds never gave me a chance, and I sneaked home drenched and disappointed. Why not have got a boat? Ah, then my guilty purpose had been revealed. A pot-shot out of thick brushwood in a quiet bay—none would have been the wiser; but a naval action had been a flagrant affair.

Such was my first acquaintance with goosanders (*Mergus merganser*), perhaps the handsomest of British waterfowl. The male, that is; for the duck is a dingy creature, clad in neutral tones of brown and gray. Yet how fleeting is the goosander's nuptial finery. In this he resembles the common mallard; no sooner has the rapture of courtship cooled than the glorious green fades from his hood, the delicate salmon tint from his vest, the white and sable from his upper part and wings, and he masks himself in the ashen raiment of his spouse. Only his eyes and

¹ *Memories of the Months*, First Series, pp. 10, 19, 21; Second Series, pp. 32, 258, *et passim*.

vermilion beak and feet retain their brilliancy. In this disguise he passes with the uninitiated as a different bird, and is known as the dun diver. But among all the gay and charming creatures that gladden the banks of a Highland salmon river in spring, there is none, if it be not a flight of wild swans, to compare with the male goosander as he wings his arrowy course under a March sun.

There are two other British species of *Mergus*, the merganser (*M. serratus*), commonly called the sawbill, and the smew (*M. albellus*), a lovely creature which seldom comes further inland than the tides will carry it. The smew is smaller than the other two species; its bill, legs, and feet, instead of being scarlet or orange, are lead-coloured. The breeding plumage of the male is snowy white, fantastically streaked and slashed with intense black, and delicately laced with black on the flanks.

The other *Mergus*, the sawbill, is known to every salmon-fisher as one of the deadliest foes to smolts and fry. The goosander is every whit as bad. Lithest of swimmers, deftest of divers, the mischief wrought by these birds when the young salmon are descending to the sea is incalculable. But never until this autumn (1904) did I suspect them of plundering spawning-beds. Mr. Sykes of Borrobol on the Helmsdale shot a sawbill which, on being opened, was found to contain two pounds weight of trout ova.

I bear this testimony with a sad heart, for the swift flight of the merganser up and down the river, and, later in the season, the splashing scuffle of the young in their anxious mother's wake, are associated in memory with many a day of wild sport.

LXXX

One so often hears discussion as to what is the shortest day in the year, that I feel entitled to assume that I am not the only person unable to answer the question confidently without referring to an almanac. Lovers, and others similarly afflicted, will quote Walter Savage Landor—

‘Why do I smile? I hear you say,
A month, and then the shortest day;
The shortest, whate’er month it be,
Is the bright day you pass with me.’

But the preponderance of popular opinion is in favour of December 21; and it is true that there is no shorter day than that. But it is not *the* shortest day, seeing that there are six other days equally short—the seven days from 19th to 25th inclusive constituting the Winter Solstice, or Sun Halt, when the sun’s ecliptic touches the Tropic of Capricorn. In fact, as late as January 4 the sun rises three minutes later than on December 21, the balance being redressed by later setting. There are, therefore, seven days in each year upon which the sun is above the horizon of Greenwich for only seven hours forty-six minutes, an allowance of daylight which, grudging as it is, of course diminishes appreciably with every degree of latitude north of Greenwich.

Even so, the Winter Solstice marks the turn of the year only in a chronological sense. The average coldest month in the year is not December, when our soil receives least of the direct rays of the sun, but January, because during the whole of that month the earth con-

tinues to radiate or part with more heat than the sun is able to give it. This is liable to modification by varying atmospheric conditions. Thus, if in December clear skies preponderate over clouds, radiation will go on faster, causing the mean temperature to fall lower, than in a cloudy January. Under a cloudy sky the heat radiated from the earth is reverberated from the cloud canopy, keeping the intervening atmosphere warm. If you leave a table out upon the lawn during a clear, still winter night, the grass around will all be white and crisp with hoarfrost in the morning; but under the table it remains soft and green. The heat radiated from that fraction of the earth's surface cannot escape into space; it strikes the under side of the table, and is returned whence it came, radiation and return going on until the surrounding atmosphere has become so bereft of heat as to flow into the protected space.

Although it is vain to reckon the turn of the year as corresponding with the passage of the shortest days, certain living organisms respond to a vivifying influence of which we grosser creatures are utterly insensible. While we are piling fresh logs to combat the growing cold (or to put it more scientifically, to replace the waning heat), a few humble herbs are on the point of developing their supreme vitality. Among these, the most familiar to dwellers in the west is the snowdrop, probably not a true native of any part of the British Isles, but a colonist which has established itself in multitude wherever a cool soil and moist climate combine to encourage it. In certain westland woods it occupies many acres, making a marvellous display in January and February,

incredible to those who only have experience of it in the Midlands and eastern counties. Provided that the ground is not frostbound, the milky blossoms of the snowdrop appear during the shortest and darkest days of winter, thrust upwards first like white spear points, then turning over and drooping like fairy bells. In the west I have found the first bell as early as December 19, and it is seldom that several may not be gathered before the New Year.

In one respect the snowdrop differs remarkably from most other bulbous plants, including those of the *Amaryllis* family to which it belongs. No forcing, no coaxing under glass, either with or without artificial heat, will prevail to produce blooms a single day before the appointed time. Over and over again have I seen clumps potted and grown through the winter in a greenhouse or frame. These plants flower simultaneously with those exposed to all weathers outside. Nobody has hit upon an explanation of this peculiarity, which is the more puzzling because of the readiness with which the various species of *Narcissus*, members of the same family, respond to warmth and shelter.

Less well known than the snowdrop is the spring snowflake (*Leucoium vernal*), differing only from its near relative in the inner segments of the petal-like perianth, which are as long as the outer ones, both inner and outer being delicately cusped and tipped with gold, and in the anthers, which split longitudinally to discharge pollen, whereas the anthers of the snowdrop open only at the top. Moreover, the snowflake far surpasses the snowdrop in fragrance, which is not what one would expect, for

the snowdrop distils free nectar, and the snowflake has none. There seems to be no reason why the snowflake should not be established as freely in our woodlands as the snowdrop; it is already naturalised in Dorsetshire. Probably it would be equally immune from the almost omnivorous rabbit, though I have not yet proved this. Anyhow, garden-lovers who have not got it should hasten to obtain it, in a growing state if possible, much disappointment arising from imported bulbs, which soon lose their vitality when kept out of the ground. The variety called *Carpathicum* is richer and more vigorous than the type, often producing a couple of blossoms on each stalk. The spring snowflake flowers about three weeks later than the snowdrop, towards the end of January, in ordinary seasons, but is much more liable to be retarded by frost. In hard winters the display is delayed till March. [*N.B.* — Don't confound the spring with the summer snowflake (*Leucoium aestivum*), a plant of inferior grace, producing flowers very similar to the other in May, on stalks a foot or eighteen inches high.]

Intermediate in time between the snowdrop and snowflake comes the winter aconite (*Eranthis hyemalis*), raising its golden cup, exquisitely fringed with a green ruff, only some three inches above the soil. What it lacks in stature it makes up in abundance of flowers. Unlike the snowdrop, it is more commonly naturalised in the eastern counties than in the west. I may never forget the charming surprise received by a display of winter aconites in a Lincolnshire wood. I was hunting, many years ago, with the Cottesmore hounds, and had

occasion to jump a low fence into a covert. It was like plunging into sunshine. The whole floor of the wood was carpeted with gold, far as the eye could reach among the vistas of stems. Like the bulbs of snowflake, the corms of winter aconites are too often purchased in a dry condition, and come to little or nothing when planted. The best way to establish this most desirable herb is by moving growing roots or raising it from seed.

After all, one cannot do without Christmas roses (*Helleborus niger*) to carry one through the dead time of year. Of these the noblest and earliest is the variety known to gardeners as *altifolius* or *maximus*, which produces its earliest blossoms in October, and keeps a profuse supply till the running is taken up by a great number of varieties of the same species. One positively cannot have too many of these delightful herbs, the very Mark Tapleys of the floral world, gladdening all the borders which they can be persuaded to make their home. But, alas! how capricious they seem. Here is the poor man's plot in which they revel, spreading into spacious clumps and sending up sheaves of bloom, ivory and rose, winter after winter; and there is the rich man's parterre, where the chances are they refuse to produce either flowers or leaves. O you who possess abundance of Christmas roses! *fortunatos nimium*, see that you keep them. Never let them be disturbed at the root, for you know not what vain labour some of us have spent in vain endeavour to possess the like.

Another most capricious little winter beauty is the hepatica or liverwort, an ugly name given to the plant by mediæval herbalists because of the fancied resemblance

in shape of the leaves to the human liver. This was quite enough for professors of that primitive system of medicine known as 'the doctrine of signatures' to cause the hepatica to be prescribed as a remedy for liver complaint. Capricious! I should think it was. I have seen woods in the Maritime Alps full of its scattered stars—nay, I was lately in a Tweedside garden of which it had taken absolute possession, sowing itself profusely wherever the soil was not disturbed. In Ireland, too, it flourishes like a dandelion, not only the single blue, pink, and white, and the double red, all of which thrive with some of my neighbours, but the double blue, which beats most cultivators in England and Scotland.

Not to be forgotten among the earliest flowers of the year is the quaint little *Dondia epipactis*, a humble but gay member of the great Umbellate family, to which our carrots and parsnips, hemlock and samphire, belong. It is one of those lowly growths whereof the longevity seems to have no natural term. Let it but have a quiet corner, free from ranker vegetation, and it will outlast the giant oaks.

I had well-nigh forgotten the winter heliotrope, which is not a heliotrope but a coltsfoot (*Tussilago fragrans*), all too seldom seen. Not for display, though the delicately-tinted blossoms have much quiet loveliness, but for its fragrance is this plant to be cherished. Cherished, did I say? It wants no coddling. Stick a few roots into any waste sunny spot; it will take speedy possession, and reward you by perfuming the air of midwinter with the summer scent of heliotrope.

Among loftier plants there are a few more than most

people take advantage of, that brighten the darkest Christmastide with their flowers. Gayest of these is the winter jasmine (*Jasminum nudiflorum*), which, even if one crop of golden bloom falls under the tooth of frost, speedily prepares another. This should be trained against a south or east wall; so should the evergreen *Azara microphylla*, which will reward you with crowded florets, deep golden in hue and of delicious fragrance, produced on the *under* sides of the sprays. For a wall, also, is the strange *Chimonanthus fragrans* (not to be confused with the summer-flowering *Chionanthus*, the fringe tree), which in warm districts will not refuse its weird bells, green and yellow shot with flesh-colour, diffusing a powerful and exquisite odour. A spray or two set in water will perfume a whole room for days. Do not neglect the witch hazel, but see that you are supplied with the Eastern species (*Hamamelis arborea*), which clothes its leafless limbs in January with rows of curiously-shaped flowers, dark red and yellow, like tiny orchid blooms. The American species, *H. virginica*, is not worth growing. Laurustinus nearly finishes the list, though *Berberis Bealii* must not be overlooked, which crowns its noble horn-like leaves with spires of sweet, pale yellow flowers early in January.

So much for outdoor furniture. I shall only mention one winter plant for the conservatory or cool greenhouse, which it is puzzling to know why it is so seldom seen. You shall see everywhere chrysanthemums of every degree of plethoric exaggeration, begonias rivalling the make-believes at Woollands, primulas, cinerarias, and so on; but it is the rarest thing possible to find that lovely shrub *Luculia gratissima* diffusing a vernal fragrance at

Christmastide. Yet it is the least fastidious of flowers. Planted against a pillar, or grown upon a wire balloon, it produces a great corymb of rosy flowers at the end of every shoot, opening in succession for fully two months. It is well named *gratissima*—most sweet—and it can be multiplied from cuttings as easily as a geranium.

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